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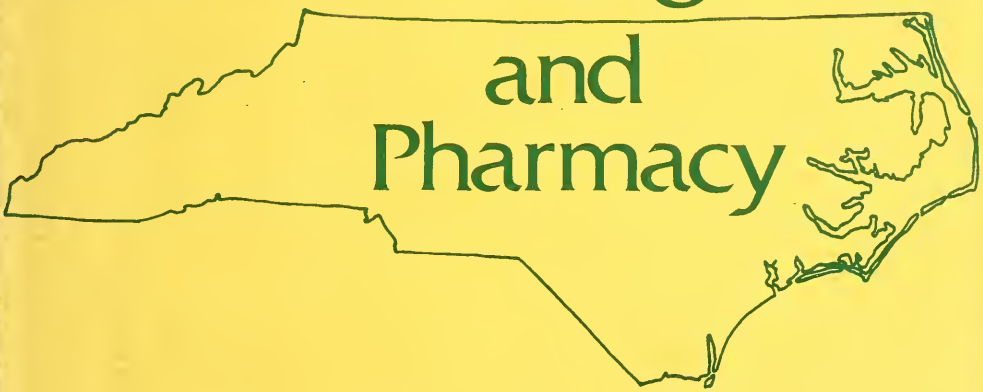

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Report of the
TASK FORCE on HEALTH PLANNING and PHARMACY PRACTICE in NORTH CAROLINA

June, 1978

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PREFACE

The National Health Planning and Resources Development Act (P. L. 93-641) has been the impetus for more effective comprehensive health planning throughout the United States. We in North Carolina have taken significant strides in expanding and improving health planning through our six Health Systems Agencies and the State Health Planning and Development Agency. The scope of our health planning efforts is indeed comprehensive, and we are concerned with all components of the health care delivery system. Drugs and pharmacy services are important such components.

Practically everyone who ever sought health care services has been prescribed drugs and received the services of a pharmacist. Since drugs and pharmacy services have wide impacts on persons seeking health care, health planners must be concerned with these services in their planning efforts. The provision of a wide range of high-quality pharmacy services at reasonable cost will help improve total health care in North Carolina. However, recent health planning efforts have given only small amounts of consideration to pharmacy services. Two important reasons for this are: a) the vast number of questions that have had to be dealt with by planning agencies under P. L. 93-641, and b) relatively little input from the pharmacy profession in these health planning activities.

We encourage the participation of all health professions in the health planning process in North Carolina. Thus, I was pleased when I learned in January, 1978, that the School of Pharmacy of the University of North Carolina, the North Carolina Pharmaceutical Association and the North Carolina State Board of Pharmacy were—with the financial support of the North Carolina Pharmaceutical Research Foundation—sponsoring the formation of the Task Force on Health Planning and Pharmacy Practice in North Carolina. This group's purpose was to study the impacts of health planning activities on pharmacy practice (and vice versa) in the state and the ways in which pharmacists could appropriately be involved in the health planning process and resulting health programs.

The Task Force has extensively studied these questions, and this report is the culmination of our first four months of study. The report provides much information on pharmacy practice in North Carolina and the broad

range of health services provided by pharmacists. Our findings show that pharmacists can have an extensive role in improving the quality, quantity and distribution of health care services in North Carolina. The potential for valuable pharmacist involvement in health planning is large.

Certainly, no one group of health professionals is a panacea for the health care deficiencies that currently exist. Appropriate utilization of all health professionals and health resources will be necessary to provide high-quality health care to all our citizens at a cost we can afford. Pharmacists and health planners should work together to help meet that goal.

Although this report and the efforts of the Task Force are specifically directed at North Carolina, health planners and pharmacists nationwide may find this report very pertinent to their own health planning efforts. Thus, I encourage those in other states to carefully consider the Task Force's report as well.

As a final note, the Task Force considers its work to be only partially completed with the production of the report. The task of following through with the many recommendations for action set forth in this report will be our next major effort. To that end, the Task Force will meet periodically to review the outcomes of our report and help insure that continued cooperation between the health planning agencies and pharmacy occurs.

Lawrence B. Burwell, *Chairman*
Raleigh, North Carolina
June, 1978

PART 1
CONCLUSIONS AND RECOMMENDATIONS

1.0 Patient-Oriented Pharmacy Practice and the "Family Pharmacist" Concept

(see parts 3 and 4 for some of the information considered by the Task Force in this area)

The practice of pharmacy has moved from activities of formulation and manipulation of chemical entities to activities of patient care. Component services of patient-oriented pharmacy practice include: 1) maintenance and use of patient medication profiles to assure proper utilization of prescription and over-the-counter drugs; 2) patient counseling regarding prescription and over-the-counter drugs; 3) primary care provision for treatment of minor self-limiting ailments amenable to non-prescription therapies; 4) serving as drug and drug therapy consultant to physicians, nurses, and other health care practitioners; 5) serving as a health information and education source for the community on the subjects of drugs, drug use, drug therapy, health promotion, and preventive medicine; 6) serving as an information and referral agent for persons seeking entry into the health care system; 7) performance of disease screening and monitoring and management of chronic disease therapy based upon protocols drawn up in conjunction with medical practitioners.

Patient-oriented pharmacy practice is an overall cost saving activity in health care. Patient medication profiles, patient counseling, and chronic therapy monitoring and management help prevent adverse drug reactions and promote successful therapy, thereby reducing the need for costly extra visits to the physician and/or hospitalization. Health education and primary care activities can help to decrease the incidence and severity of disease, thereby reducing the need for costly treatments. Despite such potential cost savings for total health care, many pharmacists cannot afford to provide comprehensive patient-oriented services since there currently exists no means of being reimbursed for this professional activity. Under the present reimbursement system, pharmacists are paid only when they dispense drugs. Even though many valuable patient-oriented services

could be appropriately provided when no drug is being sold, monetary incentives for providing these services are lacking at this time.

The "family pharmacist" concept involves the comprehensive provision of these patient-oriented pharmacy services on a continuing, long-term basis to a regularly serviced patient population. In this manner, the services provided can be tailored to meet the pharmacy care needs of each individual and family. Patients derive maximum health benefits from pharmacy services when they utilize the services of a "family pharmacist."

Not all of these patient-oriented services are available in every pharmacy. However, all of them have been demonstrated to be valuable and feasible pharmacy services. Since pharmacies are readily available throughout North Carolina, expansion of these patient-oriented services to all pharmacies in the state will make the benefits of a "family pharmacist" available to all North Carolinians.

For patient-oriented pharmacy services to be expanded throughout North Carolina, support mechanisms need to be implemented to assure competency in clinical skills of pharmacists and cost-efficiency in the provision of these services.

1.0.1 RECOMMENDATIONS related to patient-oriented pharmacy practice:

1) THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY SHOULD STRONGLY ENCOURAGE AND PROMOTE THE INTERDISCIPLINARY CLINICAL EDUCATION OF PHARMACY STUDENTS.

   Interdisciplinary education of pharmacy students in clinical settings with physicians, nurses, dentists, health educators, other health professionals, and health professions students is valuable for developing the necessary skills for providing patient-oriented pharmacy services. Training of pharmacy students with other primary care providers through the Area Health Education Centers should receive special emphasis.

2) PHARMACY STUDENT EDUCATION AT THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY SHOULD PLACE STRONG EMPHASIS ON THE DEVELOPMENT OF EFFECTIVE COMMUNICATIONS SKILLS AND GREATER UNDERSTANDING OF THE PSYCHOLOGICAL AND SOCIAL NEEDS OF PATIENTS.

   This emphasis can be achieved through increased coursework in the social and behavioral sciences and through special training programs. (see Section 4.2)

3) THE NORTH CAROLINA BOARD OF PHARMACY SHOULD CONSIDER THE ADVISABILITY OF MAKING PHARMACIST PARTICIPATION IN CONTINUING EDUCATION PROGRAMS A CONDITION FOR RELICENSURE.

Continuing education through lectures, conferences, correspondence courses, etc. can enable all pharmacists to acquire and maintain up-to-date clinical skills in such areas as patient counseling, drug therapy monitoring and management, and health education activities. The North Carolina Pharmaceutical Association, the University of North Carolina School of Pharmacy, and other accredited providers should regularly sponsor such continuing education programs to accommodate shifting and expanding knowledge demands.

4) THE APPROPRIATE UTILIZATION OF PHARMACY TECHNICIANS TO PERFORM ROUTINE, MANIPULATIVE, NONJUDGEMENTAL FUNCTIONS UNDER PHARMACIST'S SUPERVISION SHOULD BE ENCOURAGED BY THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION AND THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY.

Employment of pharmacy technicians is important for giving pharmacists adequate time in their practice to provide individualized patient-oriented services of the type previously described. The Task Force supports the study currently being done by the North Carolina Department of Community Colleges, the North Carolina Pharmaceutical Association, the North Carolina Board of Pharmacy, and the University of North Carolina School of Pharmacy to determine standardized training formats for pharmacy technicians. (see section 5.6)

5) HEALTH SYSTEMS AGENCIES, THE STATE HEALTH PLANNING AND DEVELOPMENT AGENCY, AND THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION SHOULD ENCOURAGE THIRD-PARTY PAYERS TO PROVIDE REASONABLE REIMBURSEMENT TO PHARMACISTS FOR THE PROVISION OF QUALITY PATIENT-ORIENTED PHARMACY SERVICES OF A NONDISPENSING NATURE.

Patient-oriented pharmacy services such as those previously described augment or supplement other medical services in a cost-efficient manner. By establishing reimbursement to pharmacists for providing these services, all pharmacies will be economically able to provide them to all their patients. (see Sections 3.6, 5.1)

6) THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION AND THE NORTH CAROLINA SOCIETY OF PUBLIC HEALTH EDUCATORS SHOULD MEET JOINTLY FOR THE PURPOSE OF DEVELOPING A COORDINATED AND EXPANDED PROGRAM OF HEALTH EDUCATION THROUGHOUT NORTH CAROLINA.

As an important part of such a program, pharmacists should provide much needed community-based public education on drugs and their rational usage. (see section 4.1)

7) THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION AND ITS MEMBER PHARMACISTS SHOULD DEVELOP A PUBLIC INFORMATION CAMPAIGN.

This campaign should include the promotion of: a) rational drug usage; b) the importance and practical advantages of having a "family pharmacist" and the patient-oriented services associated with such a practitioner; and c) the need for the public to consider the total scope of pharmacy services provided as well as costs when choosing a pharmacy.

8) WHEN THE PHARMACY PRACTICE LAWS OF NORTH CAROLINA ARE REWRITTEN, THEY SHOULD INCLUDE PROVISIONS PROMOTING PATIENT-ORIENTED PHARMACY PRACTICE.

The pharmacy practice laws of North Carolina are due to be rewritten and modernized in the next few years. No part of the revised laws should inhibit patient-oriented pharmacy practice. The North Carolina Board of Pharmacy should study the advisability of including maintenance of patient profiles and patient counseling as required components of a pharmacist's dispensing activities. The need to develop some type of drug prescribing role for pharmacists is currently being debated in health care circles. Inclusion of such a role should be considered in the revision of the pharmacy practice laws. (see Section 3.3)

1.1 Cost Considerations

(see part 5 for some of the information considered by the Task Force in this area)

The provision of high quality pharmaceutical goods and services to all citizens in the state should receive top priority. By the same token, the increases in drug costs which have occurred over the past few years are difficult economic burdens for certain population groups. Methods of alleviating this economic strain need to be implemented. Pharmacists have no control over increases in fixed drug costs from manufacturers and suppliers. In order to help hold the line on total health care costs to the public, pharmaceutical goods and services should be provided in a cost-conscious and cost-efficient manner without sacrificing quality in the process. Certain actions can be taken to provide quality pharmacy services in a more cost-efficient manner.

1.1.1 **RECOMMENDATIONS related to cost considerations:**

1) PHARMACISTS SHOULD BE ENCOURAGED TO UTILIZE THE BEST FINANCIAL AND PERSONNEL MANAGEMENT PRINCIPLES IN THEIR OPERATIONS.

Pre-service education at the University of North Carolina School of Pharmacy and continuing education programs sponsored by the University of North Carolina School of Pharmacy, the Area Health Education Centers, and the North Carolina Pharmaceutical Association should stress techniques for such financial and personnel management.

2) HEALTH SYSTEMS AGENCIES SHOULD ENCOURAGE PHARMACISTS AND PHYSICIANS TO DEVELOP FORMULARY SYSTEMS IN BOTH THE INSTITUTIONAL AND COMMUNITY SETTINGS.

Formulary systems are a means of reducing drug costs via decreased inventory costs and increased economies of purchasing. They are also a means of encouraging drug product review by appropriate medical committees which can result in improved physician prescribing patterns. (see section 5.5)

3) THE STATE-WIDE HEALTH COORDINATING COUNCIL IN CONJUNCTION WITH THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION AND THE NORTH CAROLINA MEDICAL SOCIETY SHOULD STUDY THE COST-RELATED IMPACTS OF THE STATE'S ANTISUBSTITUTION LAWS. (see sections 2.1.3.3 and 5.4)

Several states have recently adopted generic substitution laws permitting pharmacists to fill a prescription with a bioequivalent drug unless otherwise directed by the prescriber. These laws and their effects should be carefully studied for their possible contribution to cost containment and the reinforcement of professionalism in the practice of pharmacy.

4) THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY SHOULD ENCOURAGE THE DEVELOPMENT OF REGIONALIZED NETWORKS OF DRUG INFORMATION CENTERS COORDINATED THROUGH THE AREA HEALTH EDUCATION CENTERS.

These centers would provide ready telephone access to all health professionals concerned with drugs and drug therapy and would help decrease duplication of expensive drug information systems. More comprehensive drug information services than are generally available at present would be provided.

5) FEDERAL AUTHORITIES SHOULD BE ENCOURAGED BY THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION TO DEVELOP A "THIRD CLASS OF DRUGS" THAT PHARMACISTS CONTROL AND DISPENSE WITH APPROPRIATE COUNSELING AND SURVEILLANCE.

This drug classification would provide a category intermediate between the current classes of drugs available only on the prescription of a physician and those available without a prescription. Included in this third category would be agents which are safe enough to be used without a physician's supervision but which need the supervision of a health professional to assure their safe usage by patients. Agents of this type currently exist in both the prescription-only and non-prescription drug categories. Some likely examples of types of agents to be included in a pharmacist-controlled classification are: currently non-prescription sleep aids and long-acting nasal sprays; currently prescription-only antihistamines, decongestants, and cough syrups. Development of such a class of agents would promote better self-medication by patients and reduce the need for costly physician visits related to the treatment of minor illnesses. A statement of the Task Force's support for this concept shall be sent to the Food and Drug Administration and other interested federal authorities. (see section 5.7)

6) HEALTH SYSTEMS AGENCIES AND THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION SHOULD ENCOURAGE THE USE OF GROUP PURCHASING PLANS AMONG INSTITUTIONS AS WELL AS INDEPENDENT PHARMACIES TO ENABLE PARTICIPANTS TO OBTAIN PHARMACEUTICAL PRODUCTS AT LOWER PRICES.

Group purchasing plans can lower pharmacy costs since lower prices from pharmaceutical manufacturers can be obtained by buying in larger volumes. Such group purchasing can alleviate much of the disparity among different types and sizes of pharmacies regarding the cost of the drug from the manufacturer. Group purchasing plans for institutions are already available and plans for independent pharmacies should be established. (see section 5.0)

1.2 Pharmacy and North Carolina Health Planning Activities

(see part 7 for some of the information the Task Force considered in this area)

The six Health Systems Agencies and the State Health Planning and Development Agency are working to develop comprehensive means of meeting the health care needs of North Carolina. Until this time, pharmacy practice has largely remained outside the sphere of comprehensive health planning. Pharmacists represent the third largest of the many

health manpower groups in the increasingly complex manpower mix. As such, pharmacists could fill many roles for helping to accomplish health planning objectives. Therefore, it appears imperative that closer working relationships between practicing pharmacists and health planners should occur.

1.2.1 RECOMMENDATIONS pertaining to pharmacy and health planning in North Carolina:

1) EACH HEALTH SYSTEMS AGENCY AND THE STATE-WIDE HEALTH COORDINATING COUNCIL SHOULD HAVE A PHARMACIST WHO REPRESENTS A CONSTITUENCY OF THE PRACTICING PHARMACISTS IN THE PARTICULAR REGION OF THE STATE ON ITS GOVERNING BOARD.

   Such a pharmacist-member would establish a direct communications link between health planning agencies and pharmacists. The North Carolina Pharmaceutical Association should coordinate (through local and county pharmaceutical associations where appropriate) the nomination of several interested and qualified pharmacists to fill membership positions on these health planning boards. The North Carolina Pharmaceutical Association should encourage the participation in the nomination process of pharmacists from the many pharmacy practice settings, pharmacist-members of minority groups, and pharmacists who are also elected officials. The list of nominees should serve as the source of the individuals appointed to pharmacist-member positions on the health planning boards.

2) PHARMACISTS SHOULD BE INFORMED OF THE CURRENT HEALTH PLANNING ACTIVITIES IN THE STATE THROUGH CONTINUING EDUCATION ACTIVITIES AND OTHER ACTIVITIES OF THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION, THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY, AND WHERE APPROPRIATE, THE NORTH CAROLINA BOARD OF PHARMACY.

   Health planning officials in the Health Systems Agencies and the State Health Planning and Development Agency should communicate items of concern to pharmacy to these pharmacy agencies for dissemination of the information to pharmacists.

3) HEALTH PLANNING AGENCIES SHOULD BE AWARE OF PHARMACY PRACTICE IN THE STATE THROUGH REGULAR COMMUNICATIONS WITH THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION, THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY, AND THE NORTH CAROLINA BOARD OF PHARMACY.

   Every effort for mutual cooperation between various planning bodies and organized pharmacy groups should be encouraged.

1.3 **Other Areas of Consideration**

(see part 2 for some of the information the Task Force considered in this area)

The practice of pharmacy is performed within the realm of social, economic, and political reality. In addition to the areas which have previously been mentioned, a variety of other particular situations warrant attention.

1.3.1 **RECOMMENDATIONS related to these other areas:**

1) THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY, THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION, AND PHARMACISTS OF NORTH CAROLINA SHOULD SEEK TO RECRUIT AND RETAIN IN ACTIVE PRACTICE MEMBERS OF MINORITY GROUPS.

   In a related matter, the North Carolina Pharmaceutical Association and other organized pharmacy groups should encourage active membership and leadership in their organizations by minority pharmacists.

2) IN PROMOTING EXPANDED PATIENT-ORIENTED SERVICE ROLES FOR PHARMACISTS, THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY, THE NORTH CAROLINA BOARD OF PHARMACY, AND THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION SHOULD TAKE STEPS TO ASSURE THAT THESE EFFORTS PRESERVE THE BROAD DISTRIBUTION OF PHARMACISTS IN THE STATE.

   Such steps are necessary since pharmacists are the most widely distributed health care professionals in North Carolina and, as such, contribute to better accessibility to health care for all North Carolinians.

3) LOCAL PHARMACY ORGANIZATIONS SHOULD PUBLICIZE METHODS FOR GAINING ACCESS TO EMERGENCY PHARMACY SERVICES AND SHOULD DEVELOP SYSTEMS TO TRANSMIT INFORMATION ABOUT SUCH SERVICES BACK TO A PATIENT'S "FAMILY PHARMACIST."

   Publicizing such methods in particular localities improves accessibility to pharmacy services for the citizenry. Transmitting information about emergency pharmacy services provided back to a patient's family pharmacist assures that complete pharmaceutical records can be maintained for the patient.

4) LOCAL PHARMACY AND MEDICAL GROUPS AS WELL AS THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION, THE NORTH CAROLINA SOCIETY OF HOSPITAL PHARMACISTS, AND THE NORTH CAROLINA MEDICAL SOCIETY SHOULD CONTINUE TO WORK TOGETHER TO ESTABLISH LINKAGES FOR MORE INTEGRATED MEDICAL AND PHARMACEUTICAL CARE TO FACILITATE IMPROVED TOTAL CARE FOR PATIENTS.

These linkages are important because they provide for continuity of patient care between physicians and pharmacists and among pharmacists in the various pharmacy practice settings.

PART 2
BACKGROUND ON PHARMACY SERVICES IN NORTH CAROLINA*

2.0 INTRODUCTION

Pharmaceutical services have not yet been considered by health planners to any great extent. So much has this topic been ignored, even by pharmacists, that published background material is hard to find. In a scan of "Medline" and *International Pharmaceutical Abstracts*, only three articles were found in cross-referencing health planning and pharmaceutical services.[1,2,3] Subsequent searches in other bibliographic sources yielded no published materials on health planning for pharmaceutical services either. Little attention has been focused on pharmacy services in previous national planning attempts (such as Comprehensive Health Planning or Regional Medical Program) and although the wording of Public Law 93-641 does not mention pharmacy, the scope of the planning certainly makes inclusion of pharmacy implicit in the intent of the law.

The public acceptance of pharmacy services as a separate and distinctive component of health care practice is evidenced by the existence of pharmacy boards as licensing and certification agencies in all of the states. With the increasing intricacy of the medical field, and the accompanying growth of technology related to the use of medication in patients, the need for specialists in drug composition and administration continues to grow. As the Millis Commission[4] (a recent study group which evaluated the pharmacy profession) has pointed out,

> "The Study Commission recognizes that among deficiencies in the health care system, one is the unavailability of adequate information for those who consume, prescribe, dispense and administer drugs. This deficiency has resulted in inappropriate

*Adapted from "An Analysis of Factors Related to State-wide Planning of Pharmacy Services in North Carolina" by Steven R. Moore, Department of Health Administration, School of Public Health, University of North Carolina at Chapel Hill, 1977.

drug use and an unacceptable frequency of drug-induced disease. Pharmacists are seen as health professionals who could make an important contribution to the health care system of the future by providing information about drugs to consumers and health professionals. Education and training of pharmacists now and in the future must be developed to meet these important responsibilities."

One outcome of inadequate pharmacy services that served as a basis for this report is the problem of drug interactions. While as many as 5% of all hospital admissions are probably a direct result of drug-induced illness,[5] as many as 20% of all hospital patients may require extended periods of hospitalization due to drug-induced problems.[6] This data may tell only a small picture of the overall effect of untoward or inappropriate drug usage.

There are several reasons why pharmacy services have not become a topic of interest in health planning circles. First, pharmacists have not been active participants in health policy deliberation. The profession has always been closely allied with the medical profession and thus much of the input in policy decisions has been made on behalf of pharmacy by physicians. This may or may not have been representative of pharmacy concerns. Second, the pharmacy practitioner has traditionally been an independent small businessman who placed limited necessity on participation in and support of professional organizations. Consequently, there is not now nor has there been a strong national organization that represents pharmacy in the macro-policy level of government. Instead pharmacy remains fragmented with individual practitioners having little real feeling of input into high level decisions. In the same way, this feeling has encouraged the largely independent nature among pharmacists that strongly opposes outside interference to any degree in the self-determined course of business events. Third, and perhaps most important, pharmacy services have not been included in most third-party payment plans for outpatient services. Medicare, much of Medicaid, most Blue Cross plans and many other insurance carriers simply do not feel that pharmacy services are payable from their coverage. Pharmacy costs for outpatient prescriptions are thus paid by the private patients and given little attention for planning purposes.

Pharmacy services are still a major need for consideration in the area of health planning, however, for a simple economic fact: prescriptions cost money which has to be paid. The average citizen utilizes about six prescriptions per year,[7] and with the average cost of a prescription at a little over five dollars,[8] that accounts for over six billion dollars annually on prescription drugs alone, to say nothing about the large number of non-prescription drugs consumed.

2.0.1 PHARMACY PRACTICE LOCATIONS

Perhaps one of the biggest problems to overcome in discussing the potential for planning of pharmacy services is defining the exact services which could fall under the area of discussion. The types of practice fields for pharmacy can be defined as follows:

1) **Community Outlet**—This traditional pharmacy practice accounts for about eighty percent of all pharmacy operations in North Carolina (about 1050 operations). This type of operation many times incorporates a variety of other sales areas (e.g., cosmetics, health aids, etc.) into the business operation and provides a variety of services to its customers. Delivery and charge accounts are commercial conveniences often available as well as extended hours, many times available every day of the week. This category includes both the small independent and the larger chain store outlets. In North Carolina, over one-half of these operations are "one-person operations" with only a sole pharmacist employed. This is also the type of pharmacy operation which most consumers patronize. The pharmacist may be a salaried employee or a businessman in complete control of the finances of the entire operation.

2) **Institutional Pharmacy**—The institutional pharmacist was once the luxury of larger institutions, however, the increasingly complex picture of drug distribution and problems of patient compliance have made the institutional pharmacist a near necessity. All but the smallest institutions (hospitals, nursing homes, etc.) now have at least a part-time pharmacy position (i.e. about 200 institutional pharmacy units in the state). Differing from the community pharmacist, the institutional pharmacist is a salaried or fee-for-services individual with responsibility directly accountable to institutional administrators. Traditionally, this position has had low visibility with virtually no patient contact, though this situation is rapidly changing with the enlargement of the pharmacist's role in the health care team. The hours of operation are usually limited and inpatient services are primarily, if not exclusively, provided.

3) **HMO Units**—With the increasing push for pre-paid and comprehensive health maintenance units, many programs are adding in-house pharmacies. Though a minimum enrollment of 4,000 is needed for such an operation,[9] an in-house pharmacist is often viewed as a source of additional revenue for the larger program. The hours of operation and patient visibility are quite variable and tailored to the needs of the particular HMO. In-house pharmacists are salaried or on a fee-for-service contract. This type of practice is virtually unknown in North Carolina.

4) **Mail Order Pharmacy**—This type of operation is promoted where substantial economic savings are viewed for memberships (e.g., National Association of Retired Persons), pre-paid union plans (e.g., United Mine Workers), or government agencies (Veterans Administration), and is void of any patient-pharmacist contact. The operation is dependent upon volume for economic stability, with salaried personnel and limited hours of operation.

5) **Health Clinics**—Pharmacy services of some extent are provided in many health clinics. Pharmacists practice in many of these and provide cooperative and integrated services with other health professionals. In some clinics located in areas where pharmacists are not available due to sparse population or geographic barriers, pharmacist extender roles are performed by physician's assistants and nurse practitioners under the guidance of nearby pharmacists as provided for by North Carolina law. Though there are only three counties in North Carolina without pharmacies, there are several areas in the state which are serviced by rural health clinics and limited pharmacy services are included.

2.0.2 METHODS OF PHARMACY OPERATION

In additon to the various types of pharmacy units, there are different methods of pharmacy operation which are exhibited within the respective units. Foremost is individual ownership, which is by far the most popular and most obvious in visibility. The corner drug store is the best example of this type of practice. Next is common ownership by a corporation or a variety of business interests. Examples of this type of practice are the institutional pharmacy or the chain drug store. Other methods of pharmacy operation are developing in some areas. Each of these is modeled to some extent on modes of delivery of medical care. The first of these is the group practice in cooperation with physicians and other health care providers. Second is the foundation model in which several pharmacies group together for a common practice as dictated by local needs or requirements.

2.0.3 COMPREHENSIVE HEALTH PLANNING FOR PHARMACY

Pharmacy would best be incorporated as part of comprehensive health planning. This concept is well defined by Blum.[10]

> "If planning for health is to be comprehensive, all aspects of health problems, all health-related aspects of social problems, and all services directed toward the prevention or amelioration of problems or consequences are the beginning of what must be taken into account. The health activities which are aided, promoted, funded, or carried out by public agencies at all levels of government are only one of the planner's concerns. Health

activities initiated by voluntary agencies, professional or citizen groups, and those carried out for private and personal gain are equally a concern of comprehensive health planning. Anyone or anything affected by health-related matters or participating in them can expect his interests to be part of comprehensive health planning."

Clearly, this type of planning is both the intent as well as the word in recent legislated attempts at health planning such as Public Law 93-641.

There are several complaints which would be immediately raised by many pharmacists when approached with the idea of comprehensive health planning.

1) Pharmacy is already over-regulated and comprehensive health planning will be just another attempt to further restrict the practice of pharmacy. With the increasing role of the federal government and especially its regulatory agencies such as the Food and Drug Administration, further action by federal agencies into pharmacy practice is almost universally scorned. Since the political power of pharmacy is rather weak when compared to other groups in Washington, pharmacists are many times able to only react to actions taken rather than institute their own actions, thus adding further to the feeling of "big brother" controlling one's activities.

2) Retail pharmacy is well regulated through the practice of free enterprise and does not need planning to achieve better results. Though the case can be made that pharmacists are perhaps the best distributed of all health professionals, there are still areas which cannot afford pharmacies on a cost-effective basis and need aid in meeting this requirement. Unfortunately, many pharmacists who use the argument are also selling many items other than pharmacy services and need the added cash inflow of these other disposable income sales to aid their business. These consumer goods, however, should be excluded from consideration in health planning.

3) Pharmacist's planning of pharmacy services is superior to others intervening in pharmacy planning. Again, the nature of most pharmacy outlets presents an economic dilemma which is influenced by considerations other than provision of pharmacy services alone. Where a pharmacy outlet can establish itself and prove itself profitable is seen as the guideline in many instances of pharmacist's planning. Only external subsidy, which is not desired by many pharmacists, could produce a degree of business security that is sufficient to maintain pharmacies in certain economically deprived areas, thus limiting the locating of pharmacies in a largely free market to areas of economic strength.

2.0.4 HISTORICAL BACKGROUND OF PHARMACY PLANNING

The history of organized planning in pharmacy is limited to say the least. The public demand for pharmacy services has been the basic requirement, and whatever was necessary to meet this requirement has fulfilled the need. Before pharmaceuticals were manufactured on a large scale, the pharmacist was trained in an extensive apprenticeship which dealt with the securing and manufacturing of various naturally found medicines and the sales of these medicines to patrons. The corner drug store or apothecary has been a landmark in virtually all American cities. The dignity afforded the "Doc" who ran the drug store was much the same as that afforded whatever other medical personnel might be located there also. With the rapid growth of industrial society, industrial chemistry replaced the herbalist skills of the druggist and shopping centers unseated downtowns as primary commercial districts. With increasing educational sophistication and presumed need for control, schools of pharmacy and boards of pharmacy came into existence. Students became pharmacists through prescribed courses of study and passage of licensure examinations. Pharmacies existed only through inspection and licensure of boards of pharmacy. The number and location of facilities have never been controlled; only the quality of those pharmacies which are in existence is regulated. The quantity of services provided is almost totally a function of economic demand.

Up until this century, the supply of pharmacy manpower was largely due to the desire of pharmacists to perpetuate their profession. In recent years the supply of pharmacy manpower has been viewed by schools of pharmacy as their sacred domain. This position was benignly accepted by boards of pharmacy who carried on the largely perfunctory task of licensure of pharmacists. Faced with multiple demands on finite financial resources, the schools turned increasingly to federal support. Federal support, however, has led to justifiable concern by the federal government about supply and demand of pharmacy manpower and extensive studies by the Bureau of Health Manpower in the 1960's and 1970's. Pharmacy manpower, then, has been a matter of planning, although the impetus was accountability to funding sources rather than needs assessment.

The services offered by the pharmacist were largely determined by the customs of the area in which one was located. Whether a medical function or a business transaction, the service fitted the occasion. With the growth of technology, the role of the pharmacist and his actions within this role are at best indefinite. Educationally, the schools seek to implement their concept of what pharmacy legally should accomplish. Practically, the practitioners realize and implement what they envision as necessary and appropriate in pharmacy practice. Mixed within this system is a vast array of social mandates, consumer directives, government precedents and economic realities.

2.1 PLANNING OF PHARMACEUTICAL SERVICES

2.1.1 FACILITIES

The practice of pharmacy has shown a rather steady growth in the number of facilities which serve as pharmacy outlets in North Carolina in the last few years. Although there are currently three counties in the northeastern part of the state which do not have pharmacy facilities, the distribution of facilities is such that very few areas are without the immediate services of a licensed pharmacy outlet. Due to the lack of existence of pharmacies for a few rather sparsely populated and remote areas (being stated by law as further than ten miles from a licensed pharmacy) legal provisions have been made for registered nurse practitioners and physician's assistants to dispense drugs under the authority of nearby pharmacists. Pharmacists remain one of the best distributed of the health care providers in this state as well as the nation.

The number of pharmacy units has increased steadily over the last five years (see table 1). It is obvious that the proportion of pharmacies in relation to population has shown a steady, yet slow increase. However, there is no noticeable demand for pharmacies that is not being met by normal growth of existing pharmacies or newly built or planned units. The reason for this lack of shortage can be accounted for in several ways. First, though the actual number of pharmacy units has increased, there is an accompanying change in the makeup of the existing pharmacy unit types (see below). Second, the demand for purely pharmaceutical services is not necessarily a factor in the survival of a drug store due to the huge emporium appearance of many pharmacies and the large variety of merchandise. Third, there are absolute standards by which to measure availability or need for pharmacy services (e.g. population/pharmacy). Fourth, there are no mechanisms used to systematically control pharmacy locations other than economic feasibility and perfunctory licensing, and, there is no real movement underway in government circles to attempt any type of mandatory location schemes. Thus, pharmacy operations are increasingly seen as high profit enterprises and, as such, are concerns of many entrepreneurs. A closer examination of the changes in specific types of units may help clarify the growth a bit differently (see table 2).

1. **Hospital and Institutional Pharmacies**—There has been a slight growth in the number of institutional pharmacies in the last five years. This growth has been accounted for by the establishment of new institutions or by the growth of an existing unit to a size substantiating the need for a pharmacy (i.e. enlarging service from an outside consultant to an in-house limited permit). The elapsed permits are primarily from the closing of institutions which may or may not have been replaced by other institutions.

2. **Community Pharmacies**—The picture for community pharmacies has been one of basically no growth. Despite the appearance of some fluctuation in numbers, the overall picture showing new permits issued and permits elapsing (stores closing) demonstrates very little fluctuation toward growth. Increasingly the effects of market considerations are causing the selling of marginally profitable outlets to chains, closure of unprofitable units, closure of units located in areas of questionable future economic strength, death of owner-pharmacist and lack of interest by another person to assume business, as well as losses caused by natural calamity which are not replaced due to lack of capital or lack of replacement desire by owner. In a state which has always had a strong predominance for community outlets, their future appears guarded.
3. **Chain Pharmacies**—The real growth picture in pharmacy outlets has been chain pharmacies (classified as five or more commonly owned outlets). The last five years has seen a 48% growth in the number of chain store pharmacies in the state, and there is no indication of any slowing in the near future of this trend. With large amounts of investment capital, high level management experience, depth in recruitment and retainment of personnel, bulk buying and selling capabilities, as well as flair for advertising, these new stores offer prescription services and a wide range of purchasing opportunities coupled with locations that have been planned with the precision a growth business commands and utilizes. Both the appearance and depth of these new stores appeal to and attract the consumers with money to spend and a concern to obtain maximum dollar value for each purchase. The stores pay top wages for employees who can maximize output to create maximum profits. The competition which has been exerted by these new stores is often too formidable for traditional pharmacies and has led to numerous financial reversals for the small independent pharmacies.
4. **Other Pharmacy Units**—With the growth in diversity of health care delivery units, there has been an accompanying growth in diversified pharmacies. Rural health clinics, industrial and educational infirmaries, store front clinics and other similar facilities which do not conform to existing classification parameters have caused a six-fold increase in these units in the last five years and may well continue to grow in the near future.

Table 1
Pharmacy Units in North Carolina

Year	*1971*	*1972*	*1973*	*1974*	*1975*
Number of Pharmacies[1]	1214	1245	1289	1326	1355
Population of State[2] (in thousands)	5161	5240	5310	5375	5451
Number of Pharmacies per 100,000 population	23.5	23.8	24.3	24.7	24.9
Number of persons for each pharmacy	4251	4209	4119	4054	4023

[1]according to the North Carolina Board of Pharmacy
[2]according to the Bureau of the Census, Department of Commerce

Table 2
Description of Pharmacy Units in North Carolina[1]

Year	*1971*	*1972*	*1973*	*1974*	*1975*
Community Pharmacies	837	841	857	854	838
Chain Pharmacies	213	232	249	280	316
Institutional	159	167	166	165	168
Other	5	5	17	27	33
New Permits Issued					
Community	—	4	16	28	9
Chain	38	19	17	31	36
Institutional	—	8	1	5	5
Other	—	3	12	10	6
Total for year	38	31	46	74	56
Permits Elapsed					
Community	19	—	—	31	16
Chain	—	—	—	—	—
Institutional	—	—	2	6	2
Other	—	—	—	—	—

[1]according to the North Carolina Board of Pharmacy (discrepancies in absolute totals are accounted for by variance in description for special units not covered here and of a minimal number).

2.1.2 MANPOWER

The changes in manpower in North Carolina in recent years have been directly affected by two sources and indirectly affected by one other source. The primary source of change in the state is its one school of pharmacy, located in Chapel Hill. Although reciprocity provides some pharmacists in the state, the vast majority of pharmacists are North Carolinians who received their training at Chapel Hill. Increasingly the government has become involved in manpower and has done so directly through the training sites of the new pharmacists. The school in North Carolina has become pivotal in the last few years in this area. Of secondary effect is the Board of Pharmacy. After the students are trained, the Board has the power to license these individuals to practice pharmacy in the state. This licensure procedure is mandated by law as the final authority for practice in the state. Of indirect effect is the voice of the practicing pharmacists. Though theoretically represented by the Board members, the voice is often muted and as such their primary outlet is the North Carolina Pharmaceutical Association, the voice of over eighty percent of those practicing in the state. These member practitioners are able to quickly see if positions for pharmacists go unfilled or the market is flooded, if even from their limited perspectives.

The School of Pharmacy maintained an average enrollment of 261 students for the years 1953-54 to 1962-63 for the four years of pharmacy study.[81*] With a change of deans, the school began to grow. By 1966-67 the size had grown to 360, and in the following years accordingly (1967-68, 436; 1968-69, 484; 1969-70, 549).[82] In a few short years, the School had doubled its enrollment. A variety of factors caused this rather dramatic increase. The beginning of a new deanship sought a growth in pharmacist supply. In 1966, A. K. King of the Consolidated University office requested data on projected growth data for various disciplines in the University. Arden Miller, then Vice Chancellor for Health Sciences on the Chapel Hill campus, requested the appropriate data from the respective deans of the schools for a ten-year period.[83] In the section on the School of Pharmacy, the following assumptions were made:

1) the ratio of 47 pharmacists per 100,000 population should become a reality in the state;
2) there was a current deficit of 513 pharmacists in the state;
3) approximately twenty graduates per year will pursue other degrees beyond the baccalaureate degree and thus not effectively serve as practicing pharmacists;
4) attrition due to deaths of practicing pharmacists should account for needs of about 30 new pharmacists per year; and
5) approximately 90 additional pharmacists per year are needed to accommodate general population growth.

[81*]Apparent discrepancy in numbering of footnotes is due to deletion in editing of a par of the original document.

The published report showed the projected needs for pharmacists by potential enrollment of the School as follows:[84]

1967	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*
363	393	416	438	462	487	513	541	571	604

In 1968, the Health Manpower Act was enacted. In order to avail the School of the money, legislated increases in enrollment were necessary. In 1971, the Comprehensive Health Manpower Training Act was enacted. Legislated enrollment increases on a capitation basis were continued. Throughout this time, the enrollment increases which were begun as a result of the "King Report" had grown in order to obtain federal funds. Enrollments and provisions of new student graduates in larger numbers continued (see table 4). Starting in the early 70's, many community pharmacists were increasingly vocal concerning a perceived over-supply of pharmacists in the state. In 1976, new legislation was passed by Congress which did not require additions to enrollment in order to obtain federal funds.

In a more quantitative fashion, the changes which have occurred over the last few years in manpower are rather significant. As a supplier of new manpower the recent graduates of university programs provide the vast majority of personnel. In this state, the new pharmacists who pass licensure are almost totally from the one school in the state. Furthermore, the vast majority of the graduates of the one school in the state become licensed and practice in the state also. In the past seven years the School has produced an average of 137 pharmacists per year. This coincides almost exactly with the "King Report" recommendations for the same period. There are, however, some rather significant facts about the graduates of this period (see table 4). First, though the number has increased somewhat, there has been no real increase in the number of black students during the period. The enrollment has hovered around 3.5% for the entire period. Despite extensive recruitment, the basic percentage remains about the same. Second, there has been a notable increase in the number of female students. In 1972 about one-third of the students were female, while in 1976 almost one-half of the students were female. According to many experts in the field, the tendency will probably continue in the near future.

The placement of these new pharmacists presents a fuller picture of their inclusion into the work force (see table 5). From 1972 to 1976 there has been an average increase of 130 new pharmacists per year. Due to the fact that licensure is sometimes as much as one year after graduation and some graduates leave the state, there is a slight variation noted in graduates and new licensures. These new licensures are adding an average of 46 new female pharmacists per year. Since 1971, when 8.6% of all pharmacists in the state were females, there has been both an increase so

that now 15.1% of the pharmacists are female. Again, this is expected to increase in the future.

Since the Board of Pharmacy does not make the distinction between chain and community pharmacists in its reports, it is hard to discern where the flow of pharmacists is headed, though the new and larger chain stores certainly would require an increasingly large segment of the work force to adequately staff its somewhat busier and extended hour service as compared to the traditional community outlet. The number of pharmacists continues to increase in institutional settings as both the extent and complexity of institutional pharmacy demands continue to increase. In a similar manner, the number of pharmacists involved in other types of practice also continues to grow.

The inflow of pharmacists due to reciprocity from other states continues as a source of new manpower. According to the Board of Pharmacy, since 1972 there has been an average influx of 33 pharmacists per year. Though from 34 different states, 62.5% of these came from 10 states, many of which border on or are located near North Carolina (see table 6). This supply is largely unpredictable, and, due to stipulations of the Board that pharmacists work for one year under a provisional permit to practice before actual licensure, the number remains relatively low.

An analysis of the number of pharmacists as related to population gives a better view of the growth of pharmacists in the last few years (see table 5). In 1971 there were 39.6 pharmacists per 100,000 persons in the state, and there are currently 44.9. Thus, the growth of pharmacists in the state has been greater than the growth of the population of the state. Though there are no currently known unemployed pharmacists in the state (who are willing to relocate), the future point of saturation is a fact that many pharmacists fear. If the previously stated assumption that females are only a factor of 0.5 in relation to productivity of males is used in the evaluation, the following picture is shown for relative equivalent full-time pharmacists in the state.

Table 3
Relative Equivalent Full-Time Pharmacists in North Carolina

Year	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*
Revised practicing pharmacists	1949	1973	2088	2168	2204	2295
Population	5161	5240	5310	5375	5451	5523
Pharmacists per 100,000 pop	37.8	37.7	39.3	40.3	40.4	41.5

Though this is only based upon suggestion, it does present a much lower rate of growth in proportion to the population. The actual percentage growth of pharmacist strength has been somewhat sporadic but averaged 3.9% per year for the years 1972 to 1976.

Table 4
Graduates and Enrollments of UNC School of Pharmacy

Year	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*
Undergraduate enrollment	558	572	572	566	578	590	580
(in state)	(535)	(551)	(543)	(538)	(551)	(562)	(550)
White	—	—	553	547	561	568	560
Black	—	—	19	19	17	22	20
Males	—	—	370	357	316	310	297
Females	—	—	202	209	262	280	283
Graduates	128	128	162	129	136	144	132

Table 5
Pharmacists Practicing in North Carolina[1]

Year	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*
Practicing pharmacists	2037	2076	2204	2298	2350	2482
retail	1778	1801	1889	1867	1966	—
institutional	191	200	241	250	277	—
other	68	73	74	160	107	—
female	176	205	231	260	312	375
male	1861	1871	1973	2038	2038	2107
New licenses						
female	—	29	45	38	48	52
male	—	33	127	103	81	97
Reciprocities						
female	—	4	8	6	11	12
male	—	9	20	32	24	39
Delicensures						
female	—	4	5	3	11	7
male	—	29	19	35	56	47
No. of deaths	22	34	40	32	25	24
No. of practitioners over age 60	239	227	223	220	220	—
Population (in thousands)[2]	5161	5240	5310	5325	5451	5513
Ratio population to pharmacist	2533:1	2524:1	2409:1	2339:1	2320:1	2225:1
Pharmacists per 100,000 pop.	39.6	29.6	41.5	42.8	43.1	44.9
Percent of growth	—	1.88	5.81	5.1	2.21	5.61

[1]based upon figures provided by the North Carolina Board of Pharmacy; columns may not provide total of practicing pharmacists noted at top due to exclusion of some small static groups of manpower.

[2]years 1971-1976 based upon Bureau of Census, 1976 figures extrapolated at annual growth projection from 1971-1975.

Table 6
Reciprocities into North Carolina, 1972-1976[1]

State	*Total Reciprocities*	*% of Total Reciprocities*
Virginia	25	15.2
South Carolina	17	10.3
Georgia	17	10.3
Pennsylvania	10	6.1
New York	9	5.5
Indiana	8	4.9
Alabama	6	3.6
Michigan	6	3.6
Illinois	5	3.0
Total	103	62.5

[1]based upon figures supplied by North Carolina Board of Pharmacy

Table 7
Projected Manpower in North Carolina, Pharmacy 1977-1981
(ratio method)[1]

	1977	*1978*	*1979*	*1980*	*1981*
Population (in thousands)	5525	5600	5675	5750	5825
Ratio population to pharmacist	2163:1	2101:1	2039:1	1977:1	1915:1
Pharmacists	2554	2665	2783	2908	3042

[1]based upon average rate of decreases evidenced in ratio of pharmacists to population for years 1971-1976.

2.1.3 Services

In the last few years, social, political and economic factors have combined to effect a "public policy" which has dramatically influenced the practice of pharmacy in this and other states. Although the description will probably vary between any two pharmacists or persons viewing the pharmacy practice arena, there are certain areas of primary consideration. Foremost in the perception of most pharmacists is the assumed radical change in the attitudes of consumers toward pharmacy practice. Since pharmacy services are basically dealing with essential goods needed for life-threatening conditions, traditional boycotts and business slowdowns have not been evident. Press and publicity, however, have been brought to bear in an increasingly militant manner by representatives of consumer advocacy groups. Next is the increasing role that government is playing in the delivery of health as well as pharmaceutical services. Through inquiries, investigations, regulations, laws and even outright purchases of

services, government intervention is rapidly increasing in depth and intensity. Finally, economic factors that limit the finite monetary resources of citizens have had both short and long term influences upon pharmacy sales. The inter-relation of these factors adds yet another layer of complexity to the picture.

The attitudes of consumers are at best an educated guess when dealing with essential goods and services. Of course neither pharmacists nor consumers like the increasing retail prices of drugs. Increasing costs have become a way of life in all parts of the economy, however, due to increased raw materials prices as well as increased labor and production costs. The variety of drugs, the potential substitution of equivalent generic drugs, variable pricing structures of pharmaceutical manufacturers to pharmacy outlets, as well as variance in pricing methods by individual pharmacies, further complicate an already confusing means of drawing comparative costs by consumers. Consumer complaints in the past were largely non-vocal or of a general "ain't it awful" nature.

2.1.3.1 COMSUMERISM AND PHARMACY

Organized consumer groups began to form in this state in the early 1970's. Of greatest visibility is the North Carolina Public Interest Research Group (PIRG). This group, with a staff of young lawyers and consumer advocates, maintains chapters at five institutions of higher learning (Duke, Davidson, St. Andrews, Wake Forest, and University of North Carolina at Charlotte) and is supported through mandatory student fees, decided by referendum at the respective schools. Based upon their strong feeling that consumers could obtain lower priced prescription drugs through comparative shopping, PIRG members began spot checks of prescription prices in various urban settings across the state. As expected, a disparity was found in the price of generically comparable drugs at various pharmacy locations. Press conferences and newspaper articles were then utilized to alert consumers of their findings, so that lower priced prescriptions could be obtained.[85] The PIRG group saw their role as consumer advocates and planned action in this area as a legislative target for 1975. A bill requiring the mandatory posting of prices of the 100 most popular prescription drugs in every pharmacy in the state was introduced into the Legislature but killed in committee, due to pressure from organized pharmacy groups. Based upon their experiences in obtaining comparative information, PIRG members then became concerned with the need for universal telephone disclosure of prescription prices by pharmacies. A bill was introduced into the Legislature requiring mandatory telephone disclosure of prescription drug prices but this was also defeated in committee due to pressure from organized pharmacy groups. The entire sequence of events had a noticeable effect on pharmacists, largely evoking feelings of anger and frustration. There was a

concern that consumers were unrightfully singling out pharmacy as a villain and a growing animosity toward some organized consumer efforts by the pharmacists. However, due largely to the efforts of PIRG, there was also a dramatic increase in the number of pharmacies providing telephone estimations of prescription prices as well as more readily available information on the costs of prescriptions.

2.1.3.2 PRESCRIPTION PRICE ADVERTISING AND MAXIMUM ALLOWABLE COST

As both a consumer of services and as a protector of the common good, the government, both on the federal and state level, has taken some very significant steps that have affected the practice of pharmacy and hence aided in the creation of public policy. In May of 1973, the Superior Court of Wake County (and later an appeal was also upheld by the North Carolina Court of Appeals) ruled in the case of *Revco Southeast Drug Centers, Inc. vs. the North Carolina Board of Pharmacy* that the following statement which appeared in the Code of Professional Conduct was illegal:

> "A pharmacist should not solicit professional practice by means of advertising or by methods inconsistent with his opportunity to advance his professional reputation through service to patients and to society."

Although this decision was largely made (and upheld) on the basis that this requirement was inappropriate to make or enforce under the Board's legislative mandate, the decision effectively withdrew the last legal hindrance to open prescription price advertising in this state. This has had no apparent effect on price advertisement in the state.

In December of 1973, then Secretary of Health, Education and Welfare Casper Weinberger announced his intention before the Senate Subcommittee on Health, to revise the current reasonable cost reimbursement policy of the government (based upon actual acquisition costs to pharmacies) to a new system of a maximum allowable cost (MAC) for all drugs purchased by the government in programs such as Medicare and Medicaid. The regulations appeared in the Federal Register on November 15 and on subsequent dates for review. The final regulations were signed by Secretary Weinberger on July 28, 1975 (10 days before his resignation), and final regulations were published on July 31, 1975.[86] Faced with what many pharmacists considered an inequitable reimbursement mechanism, controversy raged.[87-90] In early 1976 further regulations were issued under then Secretary of HEW David Matthews for implementation of a section of the MAC regulations on April 26, 1976. This section dealt with the estimated acquisition cost (EAC) of prescription drugs to pharmacies, and immediately organized pharmacy reacted.

At this time an agreed-upon EAC has been established for only a few drugs. If matters go smoothly, it is hoped that progressively more generic drug costs can be determined in the next years.

On June 14, 1974, the Bureau of Consumer Protection of the Federal Trade Commission opened an investigation,

> "to determine whether retail druggists or others have been or are engaged in unlawful practices under the FTC Act, including, but not limited to, deceptive or unfair acts in connection with the disclosure or nondisclosure of price information related to the sale of prescription drugs anywhere within the United States."

Specifically, the FTC wanted to know what effect laws providing restrictive advertising had on drug prices, the proximity of drug advertising to FTC laws, and if drug advertising was purposefully being avoided in areas legally allowing such activity (such as North Carolina). Even though a significant effort was involved in this investigation, no public comment has been made in regard to the findings.[91]

In a case against the Board of Pharmacy in Virginia dealing with open advertising of prescription prices,[92] the United States Supreme Court decided for the plaintiff and effectively voided all laws and regulations which prohibited this activity. In rendering the eight to one decision on May 25, 1976, Chief Justice Burger made the following statement:

> ". . . The court notes that roughly 95% of all prescriptions are filled with dosage units already prepared by the manufacturer and sold to the pharmacy in that form. These are the drugs that have a market large enough to make their preparation profitable to the manufacturer; for the same reason, they are the drugs that it is profitable for the pharmacist to advertise. In dispensing these items the pharmacist performs three tasks: he finds the correct bottle; he counts out the correct number of tablets or measures the right amount of liquid; and he accurately transfers the doctor's dosage instructions to the container. Without minimizing the potential consequences of error in performing these tasks or the importance of the other tasks a professional pharmacist performs, it is clear that in this regard he no more renders a true professional service than a clerk who sells law books. . . ."

This statement, especially the latter part, so upset pharmacists that the Court, and other government officials, were bombarded with rebuttals.

2.1.3.3 REPEAL OF ANTISUBSTITUTION LAWS

With consumers increasingly seeking availability of lower priced prescription drugs, there has been a substantial movement in revoking laws

which have limited the pharmacist to dispensing the drug by the trade name which the physician specifies. With the growth in availability of generically and bio-equivalent drugs as compared to many of the more expensive trade name drugs, consumer advocacy groups have thus spearheaded movements removing barriers for pharmacist substitution of equivalent prescription drugs. Thus far, thirty-six states have revoked or amended these antisubstitution laws. A recent legislative staff report recommended the same action be taken in North Carolina.

2.1.3.4 ECONOMIC CONDITIONS

On yet another front, there have been economic effects upon the practice of pharmacy also. Of immediate concern is the state of the economy. In times of high unemployment, pharmacies are hit by increased charge accounts, increased third-party payments (and increased time for payment to the pharmacies by the intermediaries), slower impulse and luxury buying and hence a slowing of business, along with the remainder of the economy. Periodic economic fluctuations are thus important determinants of policy matters in pharmacy practice. Fortunately, with increased money flow, consumer buying in pharmacies is quick to return as with most retail business.

Many of the economic factors in pharmacy practice are reflected in the differences in pharmacy outlets, which indeed are largely determined by public policy and consumer demand. The community pharmacy, the chain pharmacy, and the hospital pharmacy are the principal types of outlets. A major phenomenon occurring in this state (as well as many others) has been the growth in the number of chain store outlets, with the accompanying decrease in the number of independently owned outlets. According to figures from the North Carolina Board of Pharmacy, the picture of the change is:

New Permits Issued by Board of Pharmacy 1971-1975

Chain Pharmacies	141
Community Pharmacies	57

Permits Elapsing through Board of Pharmacy 1971-1975

Chain Pharmacies	0
Community Pharmacies	66

Total Number of Community Pharmacy Outlets Licensed by Board of Pharmacy

	Chain	*Community*	*Total*
1971	213	837	1050
1975	316	838	1154

So frightening was the prospect of takeover of the practice of pharmacy by corporate enterprises that laws requiring maximum ownership of phar-

macy units by pharmacists were enacted in four states at the strong urging of independent pharmacy owners. Such a law in North Dakota was held valid by the Supreme Court. If the trend of chains displacing community pharmacies continues in this state, frightened independent pharmacists may well push for similar action by the Legislature.

In yet another economic disparity, community pharmacists in Portland, Oregon tired of the fact that hospital outpatient pharmacies could charge less for prescriptions than community outlets (due to lower purchase costs as tax-exempt and non-profit entities) sued, and the Supreme Court upheld the decision stating that all pharmacies must sell prescription drugs as if purchased on the open market, thus further affecting prescription prices in this state as well as all others.[93,94]

2.1.3.5 FUTURE PROJECTIONS

Any changes that occur in the delivery of pharmaceutical services in North Carolina over the next few years will be the result of a variety of influences, both external and internal. Much of the apparent desire for changes in the delivery of pharmaceutical services has been by the pharmacists themselves and may well continue to be so in the next few years. The increasing number of new pharmacists who desire something more out of their profession than counting and pouring, the newly trained clinical pharmacists who are desirous of utilizing fully their newly acquired skills, and other internal forces are seeking change. To many pharmacists changes are appropriate. One study pointed out that only a little over half of a pharmacist's time is actually spent on pharmaceutical activities, and most of this was involved with activities of "prescription fabrication and various dispensing activities. Less than ten percent of the time was spent on consultative activities that could be considered clinical in nature."[95] One group of researchers studied a cross-section of health care providers and found general acceptance for more clinical activity by pharmacists than is currently obvious and concluded that "pharmacists may not have been sufficiently aggressive in their effort to cultivate these new areas of their professional domain."[96]

Primary external forces which will shape the service components of pharmacy practice will largely be political and economic. When the economy is good, people spend money. Often inflation increases in all sectors of the economy but as long as income increases proportionately, few people worry. In the last ten years, however, inflation alone has cost the government almost $40 billion in the health care sector.[97] When unemployment increases or inflation outstrips purchasing power, people are more prone to complain, and often this complaint is leveled at necessities. Drugs are one of these necessities. Quite plainly, if the economic picture is good, expansion and diversification of pharmacy services may well result, other factors not being considered (such as manpower and

facilities). If the economy stagnates, an equal effect in the opposite direction may well occur.

The deepening role of the federal government may have an even more dramatic effect on pharmaceutical services. Federal regulations for Medicare and Medicaid patients, military and veterans' benefit packages, Food and Drug Administration actions and the actual legislated practice changes deemed appropriate by the government may result. In whatever capacity, the government seeks the utmost value for the dollar invested though it usually determines that value by its own definitions. Though the fee-for-service concept is largely accepted now, new payments by capitation, salary or incentives may well occur,[98] and with it possible reformation of service outputs related to pharmacy products as we know them now. Indeed the still obvious presence of a reluctance on the part of pharmacists to charge for services alone,[99,100] may become an economic necessity with the sanction of the government treasury. Yet another alternative could be a relative pricing scale[101] which takes many interrelated factors into consideration for reimbursement. Both of these areas will be needing broad interpretation before implementation.

In many ways, the demand or provision of services will be pivotal around factors which are widely recognized today.[102] First, there will be an ever growing demand for health care services. Certainly pharmacy will be a component of this demand. If past performance is any indicator, increased demand may well mean increased diversification and hence more services. Second, there are finite amounts of health manpower and utilization patterns tend to change with demand for quantity and quality of services. Pharmacy manpower is at best unpredictable if dramatic new hallmarks for practice develop, and today's surplus might well be tomorrow's shortage. Third, the pivotal role of the institution and regionalization under hospitals may reshape service demands. As with medicine, many new pharmacy roles and services are developed in hospitals. Continued growth and power of these institutions can have substantial ripple effects. Fourth, the continued growth of third-party financing can literally reshape or redefine service demands through the power of the purse. As in all areas, there is no such thing as a free lunch, and the payment will increasingly determine the service.

Another possibility that is largely ignored but still a factor is that there may be no real change in the near future. This may either mean that there was a change, but it was not perceived externally to be one; or that there was no dramatic change but it was perceived as enough of a change to pacify internal desires for change. Whatever the near future of pharmaceutical practice in service components, this viewpoint remains largely subjective with little quantifiable background for support.

PART 3
THE PHARMACIST'S ROLE IN PRIMARY CARE

3.0 Introduction

Primary care is not a newly discovered practice area for pharmacists; however, it may be newly rediscovered. Pharmacy as practiced in the U.S. up to the 1930's was closely aligned with patient care activities now often designated as primary care. The name "Doc" was often applied to pharmacists by their patients in those times since the pharmacist functioned in many ways like a physician. The pharmacist was frequently the only medical professional readily accessible, and as such, was called upon for advice on possible diagnoses and appropriate therapy. Usually knowing most of his patients personally, the pharmacist was familiar with their health histories and could take into consideration those factors when making his recommendations. Thus, some degree of medication and health profiling of patients was often in existence in these earlier days. Of course, the sophistication of such knowledge was far below levels available today. When a physician was practicing in an area, a pharmacist's practice was often closely associated with the physician's, and physician-pharmacist interaction was not uncommon. These activities of advising patients and practitioners, initiating and monitoring therapy, and health education by pharmacists were less emphasized in the period from the 1930's to the late 1960's. Mass merchandising was more the rule of thumb which governed pharmacy practice patterns. Sharing the concerns of the nation regarding high quality health care and equal access to that care for all people, pharmacy has redirected itself back to an ever increasingly patient-oriented clinical practice. This practice, while sharing many of the same general activities of early-days pharmacists, is carried out much more effectively and thoroughly, and involves much more sophisticated applications of drug knowledge. There are basically five areas of pharmacy practice which involve primary care: treating self-limiting health problems, serving as a source of drug information and health education for the community and its health care practitioners, patient monitoring and education, drug product selection, and acute and chronic therapeutics management.

3.1 TREATING SELF-LIMITING ILLNESS

The pharmacist is the primary care provider who treats many self-limiting illnesses in patients. Most health ailments that people experience are of a minor nature and are treated without the advice of a physician. The fact that people self-treat so much is attested to by the high volume of advertising done for non-prescription drugs. Indeed, much self-treating involves the administration of drugs. With the complexity of the over-the-counter drug product market, many people seek advice on how to properly treat their minor illnesses by using these products. Pharmacists are readily perceived by the public as being familiar with drugs and are often consulted on proper therapy for such minor ailments. Questioning of the patient about the problem delineates its nature and the pharmacist determines (with consideration of the patient's medical history) the appropriate course of action. If referral to a physician is needed, such referral is made and thus, a potentially serious problem is routed to the physician perhaps much sooner than would have otherwise occurred. This sequence of events may prevent a serious problem from worsening and becoming more difficult and costly to treat. More often however, the problem is determined to indeed be minor and amenable to self-treatment by the patient. The pharmacist recommends appropriate therapy, and the more costly physician's visit is avoided. In a recent Canadian study, pharmacies successfully handled a large number of patient health problems (in 80% of the cases, the problem was appropriately treated with an over-the-counter medication).[1] Even though there is a potential conflict of interest in the pharmacist's roles of professional and merchant, a good job is being done in assessing and recommending minor illness treatment. A modification of the reimbursement system for pharmacists would further lessen the potential conflict of interest and promote more service-oriented practice.

3.2 DRUG INFORMATION AND EDUCATION

Pharmacists are an easily accessible source of drug and health care information and education for health care practitioners and the community at large. Pharmacology and drug therapy inservice education in institutions and other organized practice settings is frequently given by pharmacists. This inservice training takes many forms. Physicians are sometimes addressed in weekly conferences on drugs. Nurses are often lectured on pharmacology and drug action. Nursing students, especially in hospital-based programs, often get pharmacology training via a pharmacist lecturer. Pharmacists have established consultative and continuing education services on drugs to nurses who provide home health care services.[2,3] Such visiting nurses often have to advise patients on medication administration, monitor drug effects and patient compliance, and conduct general patient education. Pharmacists are frequently called by visiting nurses to

answer drug related questions. Both community and institution-based pharmacists have become involved in this area. Formalized continuing education programs and newsletters have also been provided to home health nurses by pharmacists. This type of arrangement has proven more financially feasible than the idea of a visiting home health pharmacist. A role model for a visiting pharmacist has been developed however.[19] Teaching appropriate pharmacology to emergency medical technicians has also been done by pharmacists.[4] More direct primary care involvement is provided when pharmacists serve as drug and health educators for the community.[5,6] Pharmacists have often given good-health lectures to school groups. Disease management courses for diabetics, hypertensives, cancer patients, ostomates[7], and others have been widely particapted in and often organized by pharmacists. General health education programs directed at community groups have been given by pharmacists. Being widely disseminated, pharmacists should be utilized more fully for appropriate health education activities. All types of pharmacists can be significant contributors. They should be encouraged to do so, and the public should be encouraged to seek out pharmacists as a source of drug and health care education.

3.3 PATIENT PROFILES AND PATIENT COUNSELING

Pharmacists are widely involved in important primary care functions of patient drug therapy monitoring and patient education.[8,9,10] Many pharmacies keep active medication profiles on their patients and utilize these to screen for proper compliance, drug sensitivities and interactions, and other pertinent patient data that can affect drug therapy. By this means, inappropriate therapy duplication or interaction due to a patient seeing more than one physician without keeping the physicians abreast of this practice can be minimized (assuming the patient utilizes the same pharmacy regularly). Improper compliance with drug therapy by patients is generally acknowledged to be a widespread occurrence. This problem reduces the effectiveness of health care significantly, prolongs illness in many instances, and can increase the utilization of expensive health care services. Thus, if proper compliance can be increased, health will be improved and health care costs reduced. Pharmacists, as the last professional the patient contacts prior to beginning drug therapy, have significant potential input in this area. In many pharmacies, patient consultation on proper use of medication in the context of the patient's disease has become an integral part of the dispensing process. Patients are often less harried in the pharmacy than they are in the physician's office and therefore, they absorb more of the information provided. Patients are better able to ask questions since the atmosphere in pharmacies is usually more relaxed. Oftentimes, in consulting with the patient, the pharmacist may discover an important piece of information that the patient declined or

thought it unimportant to tell the physician. Both verbal and printed instructions regarding proper drug usage are often provided by the pharmacist. Pharmacy's definite role in patient therapy monitoring and consultation is evidenced by the New Jersey statute mandating that patient medication profiles be kept and the Kansas and Washington statutes requiring that patient consultation be performed as a part of the dispensing process.

3.4 DRUG PRODUCT SELECTION

Drug product selection is a service which pharmacists provide that is involved in primary health care and the cost of health care.[11] In states where antisubstitution laws have been repealed (allowing pharmacists to substitute generically equivalent drugs for brand names prescribed), pharmacists can select the appropriate product which is therapeutically sound and also more economical than the brand name product. Cost savings can be passed on the the patient at no detriment to therapy. The pharmacist is also able by virtue of his training to advise the prescriber on the choice of therapeutic agent, dose, route of administration, and duration of treatment. Where patient-oriented pharmacy is practiced, it is becoming more common for pharmacists to be consulted by the prescriber when therapy is being decided upon. The Appalachian Regional Hospitals system provides for pharmacist determination of agent, dose, and duration in certain noncritical illnesses once the diagnosis has been made.[12]

3.5 ACUTE AND CHRONIC DISEASE MONITORING AND MANAGEMENT

Up to this point, discussion has been based upon several different aspects of primary health care which pharmacists are involved in, but the areas may have seemed fragmented and not uniformly applied. The final area of primary care involvement for pharmacists combines all these aspects and expands upon them. This area is that of acute and chronic therapeutics management. Pharmacists have been becoming more active in this area, usually in settings such as outpatient and ambulatory care clinics, but also occasionally in solo physician practices.[13] In most of these settings, the pharmacist's involvement in disease management rests primarily in the area of chronic therapy monitoring. The patient's problems are diagnosed and therapy stabilized by the physician, and then chronic monitoring for compliance, response to therapy, and side effects are done by the pharmacist according to protocols. The protocols are drawn up with the collaboration of physicians and pharmacists. In some cases, particularly in medically underserved areas, pharmacists may also perform initial diagnostic work-up of patients and treat or refer the patient to a physician according to protocols. Such a system exists in several

clinics and hospitals of the Indian Health Service.[14-18] The Indian Health Service is a branch of the U.S. Public Health Service and operates numerous clinics and hospitals which provide free medical care to native Americans, Alaska natives, and Aleuts. Most of these facilities are in sparsely populated areas of the western U.S. Physician staffing in many of these is inadequate and the physician workload is consequently very heavy. Pharmacists have been stationed in most of these units for many years. In 1973, a program was initiated to more fully utilize the training of the pharmacist in patient care activities. Several IHS facilities which had severe shortages of physicians to meet the patient load began experimental programs whereby the pharmacist saw patients, performed history taking and physical assessment, and either treated the patient according to protocols (developed by the medical staff in consult with the pharmacy staff) or referred the patient for treatment by a physician. These protocols apply to non-critical acute illnesses and monitoring of chronic therapy which together make up a large percentage of the case load in these facilities. Some of the acute illnesses treated by pharmacists in uncomplicated situations are: upper respiratory infections, headache, impetigo, skin allergies, topical fungal infections, hay fever, viral gastroenteritis, otitis media, ectoparasitic infestations, Class II Paps (abnormal cytology of the vaginal tract), and strep throat. Chronic disease monitoring includes such conditions as diabetes, hypertension, epilepsy, arthritis, tuberculosis, and birth control. In all cases, the pharmacist records his findings and actions in the patient's chart. When filling physician's orders, the pharmacist also operates from the patient's chart and thus has access to all the pertinent information needed for therapy monitoring and proper patient counseling. Thus, patient-oriented dispensing functions are performed too (technician support is provided in distribution).

When a patient checks in at the clinic, he or she chooses to see either the pharmacist or the physician. Once the scheme of things becomes familiar to the patients, many of those with minor complaints choose to see the pharmacist since they feel their problems don't require a physician for treatment, and the waiting time for the pharmacist is much less. Approximately one-third of the clinic visits have been channeled to the pharmacist after the program has become established, saving physicians' time, patients' time, and more fully utilizing pharmacists' time. Pharmacists involved in these programs tend to express much higher levels of job satisfaction. Physicians reviewing pharmacy treatment activities have felt that the protocols were appropriately followed and adequate care provided. In each of the initial program trials, it was found that pharmacists needed supplemental training in physical diagnosis and history taking plus some clinical clerkship under physicians in order to perform these new roles. The success of the programs has led to IHS establishing a formalized six month training program for pharmacists who want to enter

into this practice modality. Although the Indian Health Service also utilizes nurse clinicians and physician assistants, their numbers in manpower are much lower than that of pharmacists. Thus, pharmacists were used more to advantage in the IHS, increasing pharmacist satisfaction, and reducing the number of additional supportive personnel needed.

3.6 FUTURE PROJECTIONS

The Indian Health Service model shows how fully pharmacists can be involved in the provision of primary care. Such programs promote equal access to care for patients and appropriate utilization of services such that costs of health care can be restrained. It is quite conceivable that pharmacists could be determined to be an appropriate source for primary care in many medically-underserved areas. Although there may be some legal constraints to pharmacists performing such prescriber roles in the private sector as they do in the Indian Health Service, there is still a large area of primary care activities which the pharmacist can enter more fully. In order to do so, however, barriers must be overcome. Physicians and other health professionals need to be made aware of the pharmacist's knowledge and potential for assistance. Traditionally, pharmacists have been given little consideration in the development of health care service programs. This is probably due to the fact that most pharmacists practice in an entrepreneurial role which lacks frequent direct interaction with other health care providers. As a result, other providers lack familiarity with services provided by pharmacists and view pharmacists almost solely as drug dispensers. More awareness of pharmacists' contributions to health care by health providers in general can lead to appropriate inclusion of pharmacist components in health delivery systems. Pharmacists need to become more eager to enter into patient-oriented practice. (This barrier is being tackled through redirection of undergraduate pharmacy school training and continuing education for already-practicing pharmacists.) Of equal importance is a revamping of pharmacist reimbursement mechanisms from that of payment solely for products dispensed to that of payment for cost of drug and professional services provided. Such a revised reimbursement system would remove from the pharmacist the onus of having to sell a product to be compensated for his services. As a result, the provision of broad patient-oriented services will become economically feasible for all pharmacists. Until this revamping takes place, it will be difficult for pharmacists in entrepreneurial practice to become optimally involved in patient-oriented practice.

Pharmacists are widely available across North Carolina and, in many instances, could be an appropriate resource for providing more primary care to the public. It is already being shown that pharmacists can perform primary care activities. It remains to be determined how pharmacists can best be utilized in these roles to help solve health problems in North Carolina.

PART 4
THE PHARMACIST'S ROLE IN HEALTH EDUCATION

4.0 CURRENT TRENDS

In recent years there has been a dramatic increase in health education activities of pharmacists. This trend is evidenced by the fact that in virtually every publication devoted to pharmacy practice increasing emphasis is placed on patient information or education programs.[1-17] Pharmacists are assuming health educator roles in a wide variety of practice settings. Numerous important topics are addressed in these health education activities.

As with the developmental aspects of any new role model, there have been areas of uncertainty. First, is the area of health education really the domain of the pharmacist? As far as pharmacists who have spoken out on the issue are concerned, there is virtual unanimity for the concept. Second, can health education activities be readily adapted to existing pharmacy task functions? In various situational settings [1,4,10,11,15] this has been shown to be possible. Third, can health education activities be undertaken on a cost basis by pharmacists in a manner that does not significantly increase patient costs? Though somewhat intermixed with other factors, Smith[11] found this service to be equitable to time and costs expended, as did Schwartz.[18] Fourth, are pharmacists really interested in moving into this new direction? This aspect is dependent on the individual pharmacist, but is increasingly in the forefront of accepted pharmacist activities.

Thus far, the primary thrust of pharmacist activities in the patient information area has been concerned with improving patient compliance with prescribed dosage regimens. Several researchers[19-24] have found that emphasis to the patient regarding information on disease state and the interrelation of the projected drug therapy was successful. Significant degrees of improvement in patients' compliance with therapy have been demonstrated when pharmacists performed patient counseling activities. It should be pointed out, however, that these studies were for short periods of time (1 week - 1 month), and in some, the pharmacist's exact role was not a demonstrated cause and effect relationship to the result.

Nonetheless, these studies show good indications that pharmacists' patient education activities can be valuable ones for improving patients' responses to therapy.

Pharmacy-based community health education roles are currently being expanded and emphasized more and more. Programs to increase the public's awareness and understanding of diseases such as venereal disease, hypertension, and diabetes have been successfully operated through pharmacies. Pharmacist-directed educational programs for immunizations, poison prevention, and drug abuse prevention have also been successful. A broad variety of other health education programs could readily be adapted for use through pharmacies. Since pharmacists are the most widely available and accessible health professionals, they have large potential for impact on the vast majority of the population. Almost everyone—even those who rarely visit any other health facility—visits a pharmacy with some regularity. Therefore, when the pharmacy serves as a community health information and education center, the broadest range of the population can receive health education services.

Pharmacists, whether consciously or unconsciously, are increasingly being called upon to assume a role in the field of health education. Much of the activity which they accomplish is done so by native intuition and basic concern for a better job. As medical care becomes more and more fragmented, all components of the health care team will increasingly be called upon to assume a role in the field of health education. Much of the activity which they accomplish is done so by native intuition and basic concern for a better job. As medical care becomes more and more fragmented, all components of the health care team will increasingly be called upon to overlap in assuring that patients receive the utmost opportunity for quality acute, chronic, and preventive care. Health education functions are important components of quality patient care.

4.1 INTERDISCIPLINARY HEALTH EDUCATION ROLES

The manner in which this health education function is activated is of importance. Health education is provided throughout the continuum of health care. The physician, the nurse, the dentist, the pharmacist, as well as professional health educator provide different aspects of this service. The important thing is that a combined effort that provides the appropriate level of service to the patient at the proper time is available. This effort must in some manner be coordinated to prevent contradiction or duplication of information provided. Those professionals with special expertise in this field (i.e., the professional health educator) are vital as catalysts and technical assistants to guide, direct, and coordinate health education programs throughout this continuum of health professionals.

4.2 NEED FOR PHARMACIST TRAINING

It is unfortunate that pharmacists, who are many times the primary entry point and also many times the most accessible connection to the health care team, often have insufficient training in social and behavioral sciences to enable them to more effectively perform patient education functions. As the Millis Commission has recently stated in their inquiry into pharmaceutical education:

> "One must conclude that the present day pharmacy graduates have much greater knowledge of drug products and their effects on the human organism than they have of human behavior, cultural determinants, health service systems, and their economics. Clearly pharmacists must have ready knowledge about drugs, but they also must have ready knowledge about people, about relationships and communications with them, and about systems and costs of service."[27]

4.3 CONCLUSIONS

When looking at the overall picture of pharmacist delivery of health education services, one is led to make several conclusions. First, pharmacists have an increasingly large role in effective health education. Second, pharmacists have many responsibilities already and will need technical assistance in realistically moving into this new area at needed levels of activity. Third, public relations will need to be exerted to create a strong public image of the pharmacist as a viable health educator. Fourth, pharmaceutical education needs revamping so that practical skills and techniques for health education can be most realistically achieved. Fifth, practicing health educators need to be intimately involved in improving pharmacists' capabilities in health education.

Pharmacists have been available for a long time, functioning in various capacities, and will continue to be. Their role in health education appears a reasonable, probable, and beneficial area of growth. Proper and meaningful inclusion of pharmacists in the delivery of this service to patients appears to be a reasonable, current priority in order to fully realize the benefits of health education in improving overall public health.

PART 5
AN OVERVIEW OF SOME COST-RELATED ASPECTS OF PHARMACY SERVICES

As in all segments of health care today, factors affecting costs of services are very much an area of interest in pharmacy. There are several areas of interest involving drug costs and pharmacy costs that large segments of the public have expressed concern about. A brief review of some of these areas can help delineate many of the issues involved.

5.0 COMPONENT COSTS OF PRESCRIPTION DRUGS

First of all, it is appropriate to discuss the various factors involved in the cost of prescription drugs to the patient. There are two major components to such costs: the cost of the drug product to the pharmacy which in turn is passed on to the patient, and the cost of dispensing the product to the patient. Several factors are involved in the cost of the drug product to the pharmacy. The first factor is the cost of the active ingredient itself which includes any special costs of chemical or biological processes necessary to produce the active ingredient. Secondly, costs of formulation, manufacturing, and quality control are incurred. Such factors often exceed FDA minimum standards which insures excellent quality products but also adds to the expense of manufacturing. Marketing costs are a factor and include large expenditures on tests and documentation to get new drugs approved for use on the open market. Distribution costs paid to the wholesaler are also included in this area. Promotional costs are significant and include expenses for various forms of advertising and the employment of medical service representatives. Market research costs are incurred in order to maximize sales of products. Basic research is a large expense bearing on the cost of the drug to the pharmacy. Most major pharmaceutical companies finance the brunt of their research and development through their profits. Some companies who have little in the way of

research expenditures are able to reduce their product costs significantly but are not contributing any to pharmaceutical research advances. Corporate profit is certainly a factor involved in the cost of the drug product to the pharmacy. A very important factor is the existence of variable pricing schemes for different pharmacies. Hospitals usually pay less for a product than chain stores, which usually can buy the product more cheaply than independent pharmacies. This last factor is a large component of the trend for independent pharmacies to have higher prescription prices than chains do.

5.1 PHARMACIST DISPENSING COSTS

The cost of dispensing the product to the patient is the second major component of the cost of prescription drugs. The major factor involved here is that of dispensing services. These include costs of maintaining a place of practice, maintaining patient profiles, providing patient consultation services, paying for the dispensing function, maintaining liability insurance, providing delivery and credit services, tax record information, etc. A second factor in this cost comes from paying a salary to the pharmacy owner, employee pharmacists, and nonprofessional personnel. The cost of carrying and keeping current a large inventory of prescription products is included in this area too. A reasonable return on investment is a factor in this cost as are expenses for rent, utilities, maintenance, etc. Since there is no reimbursement mechanism for pharmacists other than through dispensing, expenses incurred for providing professional services such as profile monitoring and patient counseling must be included in the costs of dispensing services.

5.2 TRENDS IN PRESCRIPTION DRUG COSTS

For many years, costs of prescription and nonprescription drugs in this country have risen only slightly compared to cost increases for such areas as hospital charges and physician's fees. From 1950 to 1972, drug costs rose from a base level of 100 to 119 (based on the consumer price index). During this same time, hospital costs rose from 100 to 650, and physicians' fees rose from 100 to 225. In 1974 and 1975, however, this stability in drug costs began to change. From 1960 through 1973 both the wholesale drug price index and the consumer drug price index remained near the base year (1967) level of 100. In 1974, however, the wholesale drug price index rose to 112 and the consumer drug price index to 109. In 1975, these jumped to 126 and 118 respectively.[1] Thus, it appears that the inflationary spiral may be hitting drug costs now too. A factor that makes this rise in drug costs so noticeable to the patient is that only a small proportion of the population possesses any third-party insurance which includes prescription drugs among its benefits. In 1976, the average prescription charge in

the South Atlantic states was $5.27, which is slightly above the national average of $5.19.[2] A forthcoming study by Dr. J. P. Gagnon of the UNC School of Pharmacy will help to delineate the costs of dispensing in pharmacies in North Carolina.

5.3 CONSUMER INFORMATION SOURCES ON PRESCRIPTION PRICES

Availability of information to consumers concerning pharmacy costs and services is another area of interest. Oftentimes this question breaks down to one of prescription drug advertising. Historically, prescription drug advertising was prevented in most states by statute. However, a few years ago the Supreme Court declared such laws unconstitutional. Advertising of prescription drugs is now legal throughout the United States. There are several methods of information dissemination regarding pharmacy charges and services which are advocated. The pros and cons of these will now be addressed.

5.3.1 PRICE POSTING

Price posting in pharmacies has been advocated by many as a means of providing cost information to consumers. A few states have even mandated that pharmacies post such price listings. There are several problems and limitations with this practice. First of all, only a small percentage of the drug products available can be posted in a reasonable space allotment. Thus, only a limited amount of information can be placed on posters. Additionally, if price information is posted for several brands of the same drug, the space limitation problem is compounded. If it is determined that only one brand of a particular drug be posted, one must then decide whether to post the cheapest product available, the most frequently prescribed brand name, or some other brand. Since there are often several brands of the same product available and all have different costs, it can be easy to be misled by single brand posting. This occurs because the brand prescribed may often not be the same brand referred to in the posted price. Quantity variations don't always have a direct correlation with the price of the posted quantities; therefore, the customer may not be able to get a true indication of the cost of a prescription written in a quantity other than that which is posted. Very importantly, price posting does not convey to patients the types of services available to them from the pharmacy. Price posting is difficult for the patient to use effectively and get accurate information about his or her particular prescription cost and the services that are provided in that cost.

5.3.2 MEDIA ADVERTISING

Media advertising of prescription drugs has all the same problems as

price posting with regard to varying brands, quantities, and lack of pharmacy service information. In addition, media advertising raises a few new problems. Such advertising may create a demand for a product by a patient who doesn't really need it, and this demand could lead to overprescribing by physicians in response to patient pressures. Although it is hoped that this situation will not occur, it cannot be ruled out, particularly because the traditional function of advertising is to create a demand for a product. Advertising costs have to be recovered with higher drug prices for some of the store's products and, therefore, do not necessarily result in overall cost savings to the patient. Just as in other businesses, advertising of the same product by competing stores rarely occurs, and, when it does occur, the differences in price are usually insignificant. As a result, the public usually doesn't gain much in the way of comparative information through media advertising.

5.3.3 TELEPHONE INQUIRIES

Telephone inquiries of pharmacy charges and services are much better because the patient can get much more exact information on costs and services provided from several pharmacies. The only drawback here is one of being sure that the patient is accurately transmitting the information regarding the particular drug product and quantity prescribed to the pharmacist. If not, then naturally the pharmacist will not be able to provide accurate information in response.

5.3.4 DIRECT INQUIRY

Direct inquiry by the patient at the pharmacy insures that accurate cost and service information will be provided for his or her prescriptions. This procedure is the best among those described unless it is too difficult for the patient to visit as many pharmacies as desired in order to inquire. In such a case, telephone inquiries should be used.

5.3.5 CURRENT STATUS OF INFORMATION SOURCES

The current status of these methods of information dissemination in North Carolina is as follows. The American Pharmaceutical Association and most pharmacists support direct inquiries from patients regarding prescription costs and services since such inquiries enable the patient to get a comprehensive picture which he or she can use to make the best choice of pharmacy to patronize. Most pharmacists are glad to respond to legitimate telephone inquiries regarding costs and services. (There is some apprehension here about unscrupulous practices of competing pharmacies and telephone surveys of prices by persons not presenting with a bona fide prescription.) Price posting occurs infrequently, primarily for the reasons previously mentioned. Media advertising occurs even

more rarely. (When it does, it is most often used by high volume stores offering loss leaders.) If the public can be made aware of the limitations of price posting and prescription advertising, these activities will do little harm nor will they do much good. If pharmacists make a good effort to disseminate information on services provided and strongly encourage patients to inquire directly regarding cost information, there should be little public demand for price posting and prescription advertising.

There is no conspiracy to keep the public in the dark concerning prescription drug costs and pharmacy services. Patients should feel free and be encouraged to ask pharmacists for cost and service information, and pharmacists should freely offer the information in return.

5.4 REPEAL OF ANTISUBSTITUTION LAWS

A third interest area is that of repeal of antisubstitution laws and promotion of the dispensing of generic drugs in order to reduce the cost of prescriptions. Under antisubstitution laws, a pharmacist must dispense the particular brand of drug specified by the physician if a brand name drug is prescribed. Historically, antisubstitution laws were passed in the post World War II years to protect the public from "counterfeiting" of prescription drugs. At that time it was fairly common for look-alike/sound-alike imitations of name brand products to appear on the market. These imitations were usually products of no value and were marketed purely in hopes of being mistaken for the real thing. Antisubstitution laws, supported by pharmacists, made certain that the exact product prescribed was the one dispensed. Such a problem of imitations has long since disappeared, but the antisubstitution laws are still on the books in most states. With a growing number of drugs now being marketed by more than one company and with prices varying among these brands, many people have supported repeal of antisubstitution laws and promotion of generic prescribing by physicians so that patients can get the cost benefit of less expensive brands. There are several issues involved in this question.

5.4.1 QUALITY OF GENERIC DRUGS

A major issue which is raised is that of whether generic drugs are of as good a quality as the originating product brand. (Generically equivalent drugs contain the same active ingredients but are marketed by different manufacturers.) There is concern that generic drugs will not be absorbed and distributed in the body as well as the originator brand (inferior bioavailability) and that they will not produce equivalent therapeutic actions. Much testing of multiple-source drug products has occurred to try to delineate whether such differences are a problem for particular agents. Thus far, only a small number of drugs have been shown to have

clinically significant variations in effectiveness from one manufacturer's version to the next (these include anticoagulants, cardiac glycosides, anticonvulsants, thyroid preparations, and some others).[3] In addition, upgrading of compendial standards for problem drugs is being encouraged in order to insure equivalence as much as possible. Several major pharmaceutical manufacturers are now marketing high quality, lower priced generic lines. If available date is evaluated properly, a quality drug of lower price than the originator brand can be found for most multi-source drugs.

5.4.2 EFFECT ON PHARMACEUTICAL RESEARCH

Another issue is that of whether repeal of antisubstitution laws will force a decrease in research by major manufacturers. Since most pharmaceutical research in this country is carried out by the major manufacturers using funds from their profits, if the originator brands (which they market) are dispensed less, their profits may decrease and research may be curtailed. As a result, it is argued that major new drug developments may be left undiscovered. Others argue that the 17-year patent which companies get for new products is a long enough time to recover their investment and make a satisfactory profit. However, this 17-year period can be effectively much shorter since the drug may be under patent for several years before the drug's safety and efficacy are approved by the FDA and the drug is released to the open market. The significance of the effect of brand exchange on research and development by major pharmaceutical manufacturers is yet to be determined.

5.4.3 PHARMACIST AUTHORITY

The question is sometimes raised whether the pharmacist should have the authority to exchange brands for a generically equivalent product. Most people feel the pharmacist can make a wise choice in this area since he/she is usually much more aware of different brands and prices of an agent than a physician is. Where antisubstitution laws have been repealed, the physician always retains the option to specify on the prescription that a particular brand be dispensed. This option has not been exercised much and thus indicates that physicians as a whole have few objections to pharmacists selecting the particular brand of product to be dispensed.

5.4.4 EFFECT ON COSTS TO CONSUMERS

Another question raised is whether cost savings are actually effected by repeal of antisubstitution laws and promotion of generic prescribing and dispensing. A recent study of the results of the first year under legal brand exchange in Michigan showed that even though many prescriptions were

subject to brand exchange, the pharmacist exercised this option only about 2% of the time.[4] This could be a result of not stocking multiple brands of drugs which have only a very small generic market, having a percentage markup fee system rather than a dispensing fee (in which case more money is made by dispensing more expensive drugs), feeling that available generics are inferior, or some other reasons. This study was limited in scope, but it may indicate that not as much cost saving will result from antisubstitution repeal as expected. The bottom line of the matter is that generic prescribing and brand exchange save money only if less expensive products are dispensed and the savings passed on to the patient.

5.4.5 PHARMACISTS' OPINIONS

The American Pharmaceutical Association supports repeal of antisubstitution laws since they believe that an overall decrease in the cost of prescription drugs will occur, there will be improved efficiency of utilization of health manpower and professional knowledge, and that the cooperative relationship among physicians, pharmacists and patients will be strengthened. There is also a significant number of pharmacists who oppose repeal of antisubstitution laws since they feel that such action will widen the disparity between costs of drugs to the high-volume chain pharmacy versus the small independent pharmacy. Such a widening could make it even more difficult for the independent pharmacy to compete with the chain and stay in business. A possible way for the independents to combat such a problem would be to form group purchasing consortia such that they could buy in larger quantities and take advantage of quantity discounts like the chain stores do. As would be expected, the Pharmaceutical Manufacturers Association opposes repeal of antisubstitution laws. The actual impact of repeal of these laws has not been adequately assessed.

5.5 FORMULARY SYSTEMS

An important cost-related factor in providing pharmacy services (particularly in institutions) is the development and use of a formulary system. A formulary is a listing of drug entities approved for use in an institution or region. There are two types: a nondirective formulary is merely a listing of drugs stocked and readily available for use; a directive formulary limits physicians to prescribing formulary agents unless a special procedure (which is standardized for the institution) is carried out in order to procure a nonformulary agent. Usually the Pharmacy and Therapeutics Committee of the hospital (which is made up of several members of the medical staff and the chief pharmacist) controls the formulary contents. They admit to the formulary only the best drugs for use based upon objective scientific data and add and delete drugs as necessary. Therefore, a directive formul-

ary promotes physician prescribing of the most useful and effective drugs. A good formulary spares the physician pointless decisions among hundreds of available competitive agents and focuses his/her attention on meaningful choices for a desired therapeutic action. It has been shown that formularies are a positive influence on physician prescribing patterns outside the hospital too. One study showed that 87% of several physicians' private practice prescriptions were for formulary agents they used in the hospital they were associated with.[5] Cost savings enter in when one considers that hospitals with active formulary systems have less product duplication, lower annual expenditures for drugs, and lower drug inventories than hospitals without formularies. Use of a formulary makes possible keen competitive bidding to supply effective drug products. Quality products can be bought at lower prices since only one brand is bought and will thus be purchased in larger quantities. Some smaller hospitals and institutions have developed similar formularies and joined group purchasing cooperatives in order to take advantage of even better purchasing economies. Community or regional formularies have been proposed to decrease drug costs in the private sector. Such a decrease would be a real possibility since one of the major expenses in community pharmacies is having to stock a large inventory of products which are often duplicative. Group purchasing cooperatives could again be a cost saving element here. A few such community formularies have been tried and have usually been drawn up through joint efforts of a county medical society and county pharmacists. Use of formularies appears to be a good way to promote good therapeutics and reduce drug costs simultaneously.

5.6 PHARMACY TECHNICIANS

The growing utilization of pharmacy technicians is another interest area related to cost of pharmacy services. By using pharmacy technicians to perform many of the manual dispensing tasks, pharmacists are able to spend more time providing consultative, monitoring, and other patient-oriented services. The less expensive technician makes it economically feasible for the pharmacist to spend more time in patient-oriented practice and is a much more appropriate use of education and training as well. There are a wide variety of different technician training programs, but most technicians are trained on-the-job to perform the duties specific for a particular pharmacy. Technicians are used much more extensively in institutional pharmacies than in community pharmacies. A recent study by Rossiter stated that where technicians are used in community pharmacies they are used suboptimally. The best ratio by economic analysis is 1.6 to 1.8 technicians per pharmacist, but the average ratio in North Carolina is 0.9 technicians per pharmacist.[6] Most pharmacists favor use of technicians to assist them in their practice as long as they retain their system of oversight and checking of the technician's work for accuracy. Some concern

exists that chain stores may try to establish high technician-to-pharmacist ratios in order to save money. This is opposed by pharmacists since it would lead to loss of adequate control over the dispensing process and defeat the original purpose of freeing the pharmacist's time so that better patient services can be provided. A reflection of this latter concern is seen in those states that have established maximum one-to-one technician-to-pharmacist ratios in their pharmacy practice acts. The successful utilization of technician support in pharmacies is certain to expand in the coming years.

5.7 PHARMACIST-CONTROLLED "THIRD CLASS OF DRUGS"

A final interest area related to cost of pharmacy services which will be discussed in this review is that of establishment of a so-called "third class of drugs" which would require pharmacist authorization for dispensing to the public. Several drugs now dispensed by physician's prescription only and several of the more potent over-the-counter agents would probably be placed in this class. These would usually be drugs used in common minor ailments that can be easily treated but should not be used without the advice and monitoring of a professional. Patient-oriented and primary care practice models by pharmacists further the desirability of establishing such a class of drugs. This would, in effect, allow pharmacists to prescribe drugs. Today, such a step would not be considered revolutionary since many states are legislating prescribing authority for nurse practitioners and physician's assistants. California has given limited prescribing authority to pharmacists. In many rural areas now pharmacists do such prescribing when a physician is not available and a patient needs treatment. In these cases there is usually an informal cooperative agreement between the physician and pharmacist. Creation of a third class of drugs would make such practices legal, establish uniformity and protocols for such pharmacist prescribing, and spare many patients more expensive visits to physicians when only a minor, easily treatable ailment is in question.

With the acceleration of health care expenditures in the United States, cost factors are very important and timely considerations when reviewing all facets of health care delivery. Evaluation of pharmacy services must include costs of service too. Many factors must be analyzed in order to gain a broad appreciation for the cost questions being considered.

PART 6
PHARMACIST INVOLVEMENT IN VARIOUS HEALTH SYSTEM SERVICES AND SETTINGS

6.0 INTRODUCTION

Most health planning documents—when they discuss pharmacy services at all—place pharmacy services in the category of a personal health support service performed in a free-standing support setting. To some degree, this limited classification is a result of similar categorization of pharmacy services in a consultant document of the Department of Health, Education and Welfare which was published early in the planning process under P.L. 93-641. Nonetheless, this narrow classification ignores the very broad range of services and settings which pharmacists are involved in. The following list provides a better picture of the total scope of pharmacy activities. As one can see, pharmacy is involved in almost all of the service and setting categories usually mentioned in health planning documents.

6.1 HEALTH SYSTEM SERVICES

Community Health Promotion and Protection

- Community-wide health education lectures and programs
- Poison prevention programs and referral and information source in poisonings
- School health education programs and lectures
- Community drug abuse prevention and control programs
- Sponsorship of CPR classes for community citizens

Prevention and Detection Services

- Community health screening programs for hypertension, diabetes, glaucoma, and potentially other diseases (with appropriate laboratory assistance)
- Information source for better personal health care and illness prevention

Diagnosis and Treatment Services

Minor disease diagnosis and treatment according to protocols (like Indian Health Service programs)

Chronic drug therapy monitoring and management according to protocols

Evaluation and treatment of patients' minor ailments with over-the-counter drugs

Habilitation and Rehabilitation Services

Provider and fitter of surgical supplies and equipment

Advisor to community organizations for ostomates and other people with rehabilitation needs

Maintenance Services

Nursing home and mental health care facility drug therapy consultant and monitoring services

Provision of medications for extended care facilities and mental health care facilities (in-house or from separate location)

Personal Health Care Support Services

Source of prescription and non-prescription medications

Individual patient consultation services for prescription and OTC drugs

Individual patient drug therapy monitoring and profiling

Information and referral source for persons seeking health care

6.2 HEALTH SYSTEM SETTINGS

Home Setting

Drug therapy advisory and educational services for home health care nurses

Mobile Setting

Pertinent drug therapy education services for emergency medical technicians

Ambulatory setting

Provider of pharmacy services to ambulatory care clinics, hospital outpatien departments, and health maintenance organizations. Such services in clude:

- disease screening
- patient therapy monitoring and management
- patient medication histories
- drug interaction and drug-lab test interaction detection
- adverse drug reaction detection
- drug therapy advisory services

drug information services
patient therapy counseling
methadone maintenance programs
dispensing services

Short-stay, Inpatient Setting

Hospital pharmacy services which include:

dispensing—including unit dose and IV admixture services
drug therapy advisory services
drug information services
medication history-taking
discharge patient counseling
patient drug therapy monitoring for contraindications, interactions, etc.
total parenteral nutrition consultative services and management
inservice education programs on drugs and drug therapy
clinical pharmacokinetics services
drug utilization review activities

Long-stay, Inpatient Setting

Distribution and dispensing, consultative, monitoring, and drug information services for extended care facilities and long-stay mental health institutions

Free-standing Support Setting

Community pharmacy services which include:

drug therapy monitoring for patients
patient consultation services
drug therapy advisory services
drug information services
disease screening and individual health promotion services
dispensing of prescription and non-prescription medications

Community Setting

Community and school health promotion and health education programs
Disease screening

PART 7
REVIEW OF HEALTH SYSTEMS PLANS OF NORTH CAROLINA

7.0 PROCEDURES IN REVIEW PROCESS

Perhaps one of the best measures of the impact on health planning of pharmacy practice and vice versa is a review of the Health System Plans (HSP) that are the result of the first planning cycle. Each of the six HSA's was requested to submit a copy of its HSP as well as its first Annual Implementation Plan for review. In addition, the agencies were asked to submit any comments that they cared to that related to pharmacy practice either in their plan or in the process of plan development. Each of the agencies submitted copies of its HSP's (at costs ranging from free to $35). No agency submitted any substantive comments on the second request although several expressed interest in the proceedings of the Task Force.

Due to the variety of format, classification, and nature of plan description, it is difficult to analyze each of the HSP's in a set manner. Each HSP was read and implications to pharmacy were recorded in the following cases: 1) when pharmacy or pharmacy practice was expressly stated, either in commentary or planning objectives, 2) when composite groups or actions were mentioned and pharmacy could reasonably be assumed to be included, and 3) when statements were made that relate to activities that can reasonably be linked to pharmacy practice though the plan did not necessarily indicate its inclusion. Of course, in broad subject areas that have identified resources for action with no mention of pharmacy, it could reasonably be assumed that pharmacy was not to be included (even if it could be reasonably interpolated). By any means, broad statements are interpreted that could mean far more or far less than was assumed by the reviewers.

7.1 GENERAL FINDINGS

Even without surveying the Board membership or Plan Development Committee (PDC) composition, it is obvious that some HSA's have had much more informed input from pharmacy during the planning process.

Two HSA's have had pharmacists as Board members and as such show a much more inclusive approach to existing pharmacy activities and their involvement with the planning process. Other HSA's give mixed recognition to pharmacy practice, in some instances to the point of total exclusion even of obvious ongoing activities. Realizing that there are certainly time and priority constraints in any planning process, it, nevertheless, is imperative that any process deemed comprehensive examine the existence of all aspects of the system being surveyed and examine prospects for the future in an organized fashion, not solely dependent on the intensity of interest stirred by participants in the process or their special concerns.

There are certain areas of accepted pharmacy practice that appear to intercept areas of concern in several of the HSP's. Some of these are generally recognized and others are more exclusively known (or at best more easily recognized) in pharmacy circles. Areas of consideration include the following:

Primary Care—Although not necessarily identified in all professional areas, the ability and recognition (by consumers) of pharmacists to diagnose and treat many simple physical ills or refer to other providers has been a fact of life since the corner drug store days. Three HSP's recognized pharmacists as primary care providers. The other HSP's either recognized pharmacists' existence in treatment or ignored their existence in primary care altogether, opting for a medical model with physicians as "the" primary care provider.

Health Education—Most HSP's gave extensive exposure to health education, though this was often implied to somehow be the sacred domain of a "health educator." Two HSP's did indicate for pharmacists a role in aiding in patient compliance, and three HSP's pointed out cooperative roles in various aspects of patient counseling dealing with specific disease entities (e.g., hypertension, diabetes) or problems (e.g., drug misuse).

Institutional Care—Most HSP's inventoried pharmacy services in the context of short-term facilities but without regard to scope of service, though their mention in group purchasing (as a cost containment measure) was noted in two HSP's. Pharmacy services in long-term facilities were almost totally ignored, though one HSP did acknowledge the potential for improved patient compliance with medical therapy as a means for decreased long-term institutionalization.

Pharmacy Classification—Due to a consultant publication by HEW early in the planning process, pharmacy has consistently been mentioned as a "Personal Health Care Support Service" in a "Free-Standing Support Setting." This may well be reasonable by the stereotyped image of the community pharmacy, but this stereotyping inappropriately has all but ignored the variety of other pharmacy services (especially the patient-directed or clinical services) and other pharmacy settings (especially

institutional or ambulatory settings). Four HSP's used this stereotypical classification for their involvement with pharmacy services.

Again, due to the individual nature of the HSP's it is hard to draw comparisons. Each has looked at the health of its area in a distinctive manner and, based upon its judgement, made certain recommendations. The precise fit or combination of pharmacy services with the overall scheme of health care is not fully known in any area. Interpretations of statements, even where no special meaning was intended, may be incorrect, incomplete, or even overly optimistic. No value judgements are meant in their analyses. The HSP analyses follow.

7.2 WESTERN NORTH CAROLINA HEALTH SYSTEMS PLAN HSP-AIP REVIEW

Topic area	Relation to pharmacy	Potential actions
Ambulatory Primary Care	Pharmacists identified as primary care provider (p. 63, 64, 66)	
Long-term Care	Alternatives to institutionalization (p. 73)	Pharmacist aid in medication compliance to ↓ need for institutionalization.
Acute Care	Computerization of pharmacy services and patient profiles to ↓ drug related errors and longer hospitalization for patients (p. 82)	
	Health education role of pharmacists in disease and drug maintenance (p. 83).	
Community Health	Mental health extensions (p. 87-88)	Pharmacist involvement in patient compliance with medications as well as adjunct in ↓ abuse of Rx medications.
	AHEC—pharmacy student participation (p. 90).	
Goals and Objectives		
Acute Care Services	I Health Care Cost Containment	Shared services by hospital pharmacies, primary care by pharmacists
Long-Term Care	II Health Improvement Through Health Care	To assure proper pharmacy support for home health services.
Ambulatory Care	III Health Improvement through Prevention	Pharmacist role in contraceptive provision. Pharmacist role in substance abuse detection. Primary care by pharmacists Screening services for chronic diseases by pharmacists
	HSP Goal 12 HSP Objective 3—referrals from screening programs for physician and pharmaceutical services (p. 140).	
Community Health Programs	III Health Improvement through Prevention	pharmacist role in health education.

	I Health Care Cost Containment HSP Goal 18, HSP Objective 1, pharmacists, physicians, dentists, chiropractors, podiatrists, long-term care facilities and hospitals post lists of routine charges for common goods and services (p. 157).	
Second Year Priority Goals	Goal 29—New clinical and surgical procedures and drug uses be monitored and advanced on a continuing basis. Objective 1—PSRO's determine appropriateness of new clinical and surgical procedures and drug uses (p. 166).	Pharmacist input on appropriateness of new drug uses.
Appendix: B. Definition of Terms	G. Support Services—pharmacy identified as service delivered without the provision of direct patient care (p. 186).	
E. Participants in Planning Process	Region C—Mr. James Segors Region E—Mr. Donald C. Lambeth	

7.3 PIEDMONT HEALTH SYSTEMS PLAN
HSP—AIP REVIEW

Topic area	Relation to pharmacy	Potential actions
Regional Characteristics	Demand of elderly population for drugs (p. 11-14).	
Health Status Priorities	Goal 3—Circulatory disease reduction Recommended Action C—Hypertension education programs for providers through . . . . AHEC's (p. IV-9)	Pharmacist participation
Community Health Promotion		Pharmacist role in health education.
Acute Health Care Services	Pharmacy services in hospitals identified (p, V-C-9)	
Multidisciplinary Cancer Treatment Services	Chemotherapy use mentioned (p. V-C-63+ 065)	

Mental Health Services	Pharmacy service objective for improved service (p. V-C-171).	
Primary Care Medical Services	Pharmacist identified as primary care provider (p. V-C-176).	
Long-term Inpatient Care		Provision of Pharmaceutical services.
Personal Health Care Support Services	Pharmacy identified as "Direct Patient Care Support Service" (p. V-F-1) and pegged for future examination (p. V-F-2).	

7.4 SOUTHERN PIEDMONT HEALTH SYSTEMS PLAN
HSP-AIP REVIEW

Topic area	Relation to pharmacy	Potential actions
Hypertension		Pharmacist aid in medication compliance.
Venereal Disease		Pharmacist provision of prophylactics.
Drug Abuse and Chemical Coping	Objective 3-By 1982 physician and pharmacist surveillance of prescription and OTC drug abuse (p. HS-34).	
Diabetes		Pharmacist participation in medication compliance.
Health Education		Pharmacist participation in health education.
Hospitals	Existence of pharmacy services in hospitals (p. DT-4).	
Primary Care		Pharmacist functioning as primary care provider.
Mental Health		Pharmacist aid in patient medication compliance.
Long-Term Care		Assure pharmaceutical services in facilities.
Cost of Care	Objective 3—increase group purchasing among providers especially hospitals (pharmaceuticals mentioned) (p. CC-4)	

7.5 CAPITAL HEALTH SYSTEMS PLAN
HSP-AIP REVIEW

Topic area	Relation to pharmacy	Potential actions
Health Care System	Pharmacist manpower mentioned (p. 23)	
Health Education	Not mentioned	pharmacist role enhanced and recognized, especially in patient education (p. 74-76).
Cost of Health Care	Recommended Action #6—increasing awareness of health care cost by health professionals and seeking their aid in containment (p. 94-96).	
	Recommended Action #7—Develop directory of health providers services, qualification and charges (p. 96-97)	
	Recommended Action #8—Utilize all health care personnel at appropriate skill level (p. 97-98).	pharmacist role clarified and promoted in primary care, health education, etc.
	Recommended Action #9—Establish local market areas for reimbursement rate determination.	Reimbursement based upon cost of providing services.
Primary Care	Pharmacist identified as primary care provider (p. 102).	
	Objective #3—Insure participation of all interested parties in planning process (p. 108).	
	Objective #7—Increase awareness of and need for utilization of primary care providers other than physicians, nurses and dentists (pharmacists expressly mentioned) (p. 108-109).	
	Objective #8—Establish organized recruitment of primary care providers as need indicated (p. 109).	

	Recommended Action #2—Establish experimental regional health personnel recruitment effort (pharmacy manpower mentioned) (p. 113).	
	Recommended Action #4—Develop regional primary care plan (pharmacy mentioned) (p. 115).	
Infant Mortality	Objective #1—Assure availability of contraceptive information and services to those under 18 years desiring these (p. 182).	Pharmacists supplying OTC contraceptives as needed.
Adolescent Pregnancy	Objective #3—(same as objective #1 in Infant Mortality) (p. 195).	
Nursing Homes		Assure adequate and appropriate coverage for pharmacy services.
Hospitals	Pharmacy services identified in hospitals (p. 249, 250, 253-255).	Assure adequate and appropriate coverage for pharmacy services.
Heart Disease	Goal—reduce death from heart disease through diet control, ↓ smoking, and pharmaceutical maintenance (p. 261).	Enhance pharmacist activity in drug compliance work.
Arthritis and Rheumatism	Annual medication costs of above $1,000 are mentioned (p. 275).	
Diabetes	Objective #2—Every hospital provide diabetic teaching program (p. 288).	Pharmacist activity in medication and injection.
	Objective #8—Encourage Medicaid/ Medicare reimbursement for syringes and testing equipment as well as insulin (p. 289).	
Transportation		Pharmacy delivery impacts on need for transportation
Screening	Assure referrals for screening activities.	

7.6 CARDINAL HEALTH SYSTEMS PLAN
HSP-AIP REVIEW

Topic area	Relation to pharmacy	Potential actions
Heart Disease		Pharmacist activity in patient compliance with medication.
Cerebrovascular Disease		Same as heart disease
Diabetes		Pharmacist aid in diabetic management.
Venereal Disease	Protective device use in ↓ disease spread	Pharmacist dissemination of birth control aids.
Mental Health	Substance abuse of legitimate pharmaceuticals (p. 246).	Pharmacist surveillance
Ambulatory Services	Pharmacy participation in AHEC (cited p 262) ↑ third party payments for out-patient services (p. 265).	Pharmacy reimbursement for drugs and services.
Short stay Facilities (hospitals)	Hospital personnel identified (p. 276, 278).	Assurance of appropriate pharmaceutical services.
	Drug costs cited as a cause of cost increase (p. 277).	
	Special hospitals' personnel identified (p. 287).	
Long Stay Setting		Assurance of appropriate pharmaceutical services
Free-standing Support Setting	Pharmacies cited, as well as need for investigation of impact on these by other areas of HSP (p. 409).	
	Objective SY-36A: Need to inventory and classify providers in HSA as well as services (p. 411).	
	Objective SY-36B: Literature review to determine impact of free-standing support agencies on other health services (p. 412).	
	Pharmacies as health education centers, screening centers, and chronic therapy monitoring centers (p. 413).	

7.7 EASTERN CAROLINA HEALTH SYSTEMS PLAN
HSP-AIP REVIEW

Topic area	Relation to pharmacy	Potential actions
Overview of Area Health Care System	National Expenditures for drugs (p. 54).	
	HSA expenditures for drugs (p. 57).	
Prevention Services		Pharmacist activity in health education, screening, monitoring, and referral.
Primary Care Services	Free choice of pharmacy services with appropriate referral linkages proposed (p. 87).	use of pharmacist as consultant and community resource for primary care services.
Secondary Care Services	Shared service agreements and quantity buying (p. 105).	Institutional pharmacy participation.
	Pharmacy services in hospital detached (p. 110).	
Maintenance Services		Pharmacy provision in long-term facilities
Mental Health Services		Pharmacy services to mentally ill.
Personal Health Care Support Facilities	Pharmacy identified for future study (p. 171).	
Health System Enabling Services.	Cost of drugs and payment sources (p. 176).	

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